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OAK RIDGE
NATIONAL
LABORATORY

MARTIN MARIETTA

HISTORICAL CHEMICAL RELEASE REPORT

FOR

OAK RIDGE NATIONAL LABORATORY

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

ENVIRONMENTAL AND OCCUPATIONAL SAFETY DIVISON

OAK RIDGE NATIONAL LABORATORY

May 1986

OPERATED BY
MARTIN MARIETTA ENERGY SYSTEMS, INC.
FOR THE UNITED STATES
DEPARTMENT OF ENERGY

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Historic Chemical Release Report for Oak Ridge National Laboratory

Introduction

This report provides information on the past use and disposition of toxic chemicals at the Oak Ridge National Laboratory (ORNL). As part of this effort, chemicals have been identified which were believed to have the greatest potential for environmental or public health impacts based on their toxicity and/or quantities used. Historically, the research activities at ORNL have utilized numerous chemicals in a wide-range of quantities, i.e., milligram to kilogram, milliliter to liter amounts. Approximately, 2,000 different chemicals were reviewed prior to formulating the final listing of 107 chemicals which are included in this report.

Sources of Information

Several different information sources were considered in the preparation of this report. However, only those sources which were well documented have been utilized. These sources included the following:

- Annual Toxic Chemical Usage by ORNL Department - Report 3063 (1980-1985)
- ORNL Hazardous Materials Usage Reconciliation - Report 7010 (1980-1985)
- Purchase Requisitions with ORNL Account Numbers (1981-1985)
- Hazardous Waste Disposal Records (1982-1985)
- Asbestos Containing Waste Materials Disposal Records
- Waste Management Operating Records for ORNL Waste Treatment Systems
- Plant & Equipment Operating Records for Grounds Maintenance
- PCB Tracking System

Because of the limitation to use only documented records, in most cases, it was not possible to provide a good retrospective database of more than five years.

Historical Chemical Findings

Information for 107 chemicals is provided in the Attachments and Appendices. Attachment I is comprised of the completed Chemical Release Data Forms on each chemical. Attachment II provides available information on the estimated chemical usage for each of the 107 items. Finally, Attachment III provides a summation of ORNL surplus chemicals and other related activities. The Appendices serve to provide some additional information on specific chemical releases of significance.

ATTACHMENT I

Chemical Release Data Forms

CHEMICAL RELEASE DATA FORM

Chemical Name: Acetone
Uses: Solvent, cleaner, chemical laboratory uses
Solid _____ Liquid __X__ Gas _____.
Listed as Toxic: Yes __X__ No _____.

Status of Environmental Compliance (Past and Present):

At present, all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs, trichloroethylene and these are monitoring only requirements. The primary reason for this is that existing data does not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

The above named chemical was identified as a constituent present in spill material that resulted in a fish-kill in White Oak Creek in 1983. See Appendix I for more details.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Acetonitrile
Uses: Solvent, chemical laboratory uses
Solid _____ Liquid __X__ Gas _____.
Listed as Toxic: Yes __X__ No _____.

Status of Environmental Compliance (Past and Present):

At present, all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs, trichloroethylene and these are monitoring only requirements. The primary reason for this is that existing data does not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

There has been no known or suspected environmental impact due to the historic releases of this chemical.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Acrylamide
Uses: Ion exchange columns, chemical laboratory uses
Solid X Liquid _____ Gas _____.
Listed as Toxic: Yes X No _____.

Status of Environmental Compliance (Past and Present):

At present, all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs, trichloroethylene and these are monitoring only requirements. The primary reason for this is that existing data does not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

There has been no known or suspected environmental impact due to the historic releases of this chemical.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Aluminum nitrate
Uses: Chemical laboratory uses
Solid X Liquid _____ Gas _____.
Listed as Toxic: Yes _____ No X.

Status of Environmental Compliance (Past and Present):

At present, all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs, trichloroethylene and these are monitoring only requirements. The primary reason for this is that existing data does not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

There has been no known or suspected environmental impact due to the historic releases of this chemical.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Ammonia, anhydrous
Uses: Refrigerant, chemical reagent, blueprinting
Solid _____ Liquid _____ Gas __X__.
Listed as Toxic: Yes __X__ No _____.

Status of Environmental Compliance (Past and Present):

At present, all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs, trichloroethylene and these are monitoring only requirements. The primary reason for this is that existing data does not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

There has been no known or suspected environmental impact due to the historic releases of this chemical.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Ammonium hydroxide
Uses: Cleaners, chemical laboratory uses
Solid _____ Liquid __X__ Gas _____.
Listed as Toxic: Yes __X__ No _____.

Status of Environmental Compliance (Past and Present):

At present, all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs, trichloroethylene and these are monitoring only requirements. The primary reason for this is that existing data does not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

There has been no known or suspected environmental impact due to the historic releases of this chemical.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Ammonium bifluoride
Uses: Electroplating operations
Solid ___X___ Liquid _____ Gas _____.
Listed as Toxic: Yes ___X___ No _____.

Status of Environmental Compliance (Past and Present):

At present, all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs, trichloroethylene and these are monitoring only requirements. The primary reason for this is that existing data does not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

There has been no known or suspected environmental impact due to the historic releases of this chemical.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Ammonium nitrate
Uses: Fertilizer
Solid ___X___ Liquid _____ Gas _____.
Listed as Toxic: Yes _____ No ___X___.

Status of Environmental Compliance (Past and Present):

At present, all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs, trichloroethylene and these are monitoring only requirements. The primary reason for this is that existing data does not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

- No known or suspected environmental impacts.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.
- Plant & Equipment operating records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Asbestos - Containing materials
Uses: Insulation
Solid ___X___ Liquid _____ Gas _____.
Listed as Toxic: Yes ___X___ No _____.
Status of Environmental Compliance (Past and Present):

At present, all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs, trichloroethylene and these are monitoring only requirements. The primary reason for this is that existing data does not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

Asbestos has been used at ORNL and there are various on-going asbestos removal projects. The study conducted (Aug. 13 through Sept. 21, 1984) for Non-radiological Process Wastewater Characterization indicated a minimum of < 0.3 and a maximum of 3.00 (with a mean value of 0.35) Million Fibers per Liter (MFL). The flume location which served as a reference for this study indicated < 0.3 MFL. No environmental impact is presently known or suspected due to asbestos.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine the level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Asbestos-containing waste disposal records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Barium octahydrate
Uses: Chemical laboratory uses
Solid ___X___ Liquid _____ Gas _____.
Listed as Toxic: Yes _____ No ___X___.

Status of Environmental Compliance (Past and Present):

At present, all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs, trichloroethylene and these are monitoring only requirements. The primary reason for this is that existing data does not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

There has been no known or suspected environmental impact due to the historic releases of this chemical.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.

CHEMICAL RELEASE DATA FORM

Chemical Name: N-Methyl carbamate (Baygon)
Uses: Insecticide
Solid X Liquid _____ Gas _____.
Listed as Toxic: Yes _____ No X.

Status of Environmental Compliance (Past and Present):

At present, all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs, trichloroethylene and these are monitoring only requirements. The primary reason for this is that existing data does not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

There has been no known or suspected environmental impact due to the historic releases of this chemical.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.
- Plant & Equipment operating records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Benzene
Uses: Solvent, chemical laboratory uses
Solid _____ Liquid __X__ Gas _____.
Listed as Toxic: Yes __X__ No _____.

Status of Environmental Compliance (Past and Present):

At present, all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs, trichloroethylene and these are monitoring only requirements. The primary reason for this is that existing data does not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

The above named chemical was identified as a constituent present in spill material that resulted in a fish-kill in White Oak Creek in 1983. See Appendix I for more details.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Cadmium nitrate
Uses: Chemical laboratory uses
Solid __X__ Liquid _____ Gas _____.
Listed as Toxic: Yes __X__ No _____.

Status of Environmental Compliance (Past and Present):

At present, all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs, trichloroethylene and these are monitoring only requirements. The primary reason for this is that existing data does not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

There has been no known or suspected environmental impact due to the historic releases of this chemical.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Calcium hypochlorite
Uses: Bleach, chemical laboratory uses
Solid X Liquid _____ Gas _____.
Listed as Toxic: Yes X No _____.

Status of Environmental Compliance (Past and Present):

At present, all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs, trichloroethylene and these are monitoring only requirements. The primary reason for this is that existing data does not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

There has been no known or suspected environmental impact due to the historic releases of this chemical.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Carbon monoxide
Uses: Ecological research uses, synthesis
Solid _____ Liquid _____ Gas __X__
Listed as Toxic: Yes _____ No __X__.

Status of Environmental Compliance (Past and Present):

At present, all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs, trichloroethylene and these are monitoring only requirements. The primary reason for this is that existing data does not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

There has been no known or suspected environmental impact due to the historic releases of this chemical.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Carbon tetrachloride
Uses: Cleaner, solvent, chemical laboratory uses
Solid _____ Liquid __X__ Gas _____.
Listed as Toxic: Yes __X__ No _____.

Status of Environmental Compliance (Past and Present):

At present, all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs, trichloroethylene and these are monitoring only requirements. The primary reason for this is that existing data does not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

There has been one carbon tetrachloride spill 3.78 L (1 gal) in 1984. However, it occurred indoors and there was no evidence of environmental impact.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine the level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Chlordane
Uses: Insecticide
Solid _____ Liquid __X__ Gas _____.
Listed as Toxic: Yes __X__ No _____.

Status of Environmental Compliance (Past and Present):

At present, all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs, trichloroethylene and these are monitoring only requirements. The primary reason for this is that existing data does not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

There has been no known or suspected environmental impact due to the historic releases of this chemical.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.
- Plant & Equipment operating records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Chlorine, gas
Uses: Treatment of Sewage Treatment Plant effluent
Solid _____ Liquid _____ Gas __X__.
Listed as Toxic: Yes __X__ No _____.

Status of Environmental Compliance (Past and Present):

At present, all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs, trichloroethylene and these are monitoring only requirements. The primary reason for this is that existing data does not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

An unknown amount of chlorine and helium were released at Bldg. 4500S on 2/26/85. There were no known environmental impacts.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine the level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- ORNL Waste Management operating records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Chloroform
Uses: Solvent, chemical laboratory uses
Solid _____ Liquid __X__ Gas _____.
Listed as Toxic: Yes __X__ No _____.

Status of Environmental Compliance (Past and Present):

At present, all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs, trichloroethylene and these are monitoring only requirements. The primary reason for this is that existing data does not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

There has been no known or suspected environmental impact due to the historic releases of this chemical.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Chlorpyrifos (Bolt)
Uses: Insecticide
Solid _____ Liquid __X__ Gas _____.
Listed as Toxic: Yes __X__ No _____.

Status of Environmental Compliance (Past and Present):

At present, all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs, trichloroethylene and these are monitoring only requirements. The primary reason for this is that existing data does not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

There has been no known or suspected environmental impact due to the historic releases of this chemical.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.
- Plant & Equipment operating records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Chromic acid
Uses: Cleaner, chemical laboratory uses
Solid _____ Liquid __X__ Gas _____.
Listed as Toxic: Yes __X__ No _____.

Status of Environmental Compliance (Past and Present):

At present, all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs, trichloroethylene and these are monitoring only requirements. The primary reason for this is that existing data does not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

There has been no known or suspected environmental impact due to the historic releases of this chemical.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Coal oil mixture
Uses: R&D work in coal conversion programs
Solid _____ Liquid __X__ Gas _____.
Listed as Toxic: Yes _____ No __X__.

Status of Environmental Compliance (Past and Present):

At present, all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs, trichloroethylene and these are monitoring only requirements. The primary reason for this is that existing data does not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

There has been no known or suspected environmental impact due to the historic releases of this chemical.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Coal Tar Pitch
Uses: Roofing material, R&D coal conversion programs
Solid ___X___ Liquid ___X___ Gas _____.
Listed as Toxic: Yes _____ No ___X___.

Status of Environmental Compliance (Past and Present):

At present, all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs, trichloroethylene and these are monitoring only requirements. The primary reason for this is that existing data does not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

There has been no known or suspected environmental impact due to the historic releases of this chemical.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Cyclohexane
Uses: Solvent, chemical laboratory uses
Solid _____ Liquid __X__ Gas _____.
Listed as Toxic: Yes __X__ No _____.

Status of Environmental Compliance (Past and Present):

At present, all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs, trichloroethylene and these are monitoring only requirements. The primary reason for this is that existing data does not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

There has been no known or suspected environmental impact due to the historic releases of this chemical.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Diazinon
Uses: Insecticide
Solid _____ Liquid __X__ Gas _____.
Listed as Toxic: Yes __X__ No _____.

Status of Environmental Compliance (Past and Present):

At present, all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs, trichloroethylene and these are monitoring only requirements. The primary reason for this is that existing data does not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

There has been no known or suspected environmental impact due to the historic releases of this chemical.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.
- Plant & Equipment operating records.

CHEMICAL RELEASE DATA FORM

Chemical Name: 2,4 - Dichloropenoxy acetic acid (2,4-D)
Uses: Herbicide
Solid _____ Liquid __X__ Gas _____.
Listed as Toxic: Yes __X__ No _____.

Status of Environmental Compliance (Past and Present):

At present, all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs, trichloroethylene and these are monitoring only requirements. The primary reason for this is that existing data does not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

There has been no known or suspected environmental impact due to the historic releases of this chemical.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.
- Plant & Equipment operating records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Diethylbenzene
Uses: Solvent, chemical laboratory uses
Solid _____ Liquid __X__ Gas _____.
Listed as Toxic: Yes __X__ No _____.

Status of Environmental Compliance (Past and Present):

At present, all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs, trichloroethylene and these are monitoring only requirements. The primary reason for this is that existing data does not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

There has been no known or suspected environmental impact due to the historic releases of this chemical.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Diethylenetriamine pentacetic sodium salt
Uses: Chemical synthesis, chemical laboratory uses
Solid X Liquid _____ Gas _____
Listed as Toxic: Yes _____ No X

Status of Environmental Compliance (Past and Present):

At present, all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs, trichloroethylene and these are monitoring only requirements. The primary reason for this is that existing data does not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until tnat time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

There has been no known or suspected environmental impact due to the historic releases of this chemical.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.
- Plant & Equipment operating records.

CHEMICAL RELEASE DATA FORM

Chemical Name: 1,4 - Dioxane
Uses: Solvent, liquid scintillation counting, chemical laboratory uses
Solid _____ Liquid __X__ Gas _____.
Listed as Toxic: Yes __X__ No _____.

Status of Environmental Compliance (Past and Present):

At present, all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs, trichloroethylene and these are monitoring only requirements. The primary reason for this is that existing data does not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

There has been no known or suspected environmental impact due to the historic releases of this chemical.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Disulfoton (Disyston G)
Uses: Insecticide
Solid __X__ Liquid _____ Gas _____.
Listed as Toxic: Yes __X__ No _____.

Status of Environmental Compliance (Past and Present):

At present, all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs, trichloroethylene and these are monitoring only requirements. The primary reason for this is that existing data does not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

There has been no known or suspected environmental impact due to the historic releases of this chemical.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.
- Plant & Equipment operating records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Dodecane
Uses: Solvent
Solid _____ Liquid __X__ Gas _____
Listed as Toxic: Yes _____ No __X__

Status of Environmental Compliance (Past and Present):

At present, all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs, trichloroethylene and these are monitoring only requirements. The primary reason for this is that existing data does not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

There has been no known or suspected environmental impact due to the historic releases of this chemical.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Sodium salt organo-phosphoric acid, Merceptobenzotriazolo (Endcor)
Uses: Corrosive inhibitor used in cooling towers
Solid _____ Liquid __X__ Gas _____
Listed as Toxic: Yes _____ No __X__

Status of Environmental Compliance (Past and Present):

At present, all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs, trichloroethylene and these are monitoring only requirements. The primary reason for this is that existing data does not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

Results of a toxicity test using cooling tower effluents have indicated detrimental effects on acquatic test organisms. The use of this chemical as a corrosive inhibitor in the cooling towers has been terminated.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.
- Plant & Equipment operating records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Epoxy resins
Uses: Coatings, adhesives, potting of electronic circuits
Solid _____ Liquid __X__ Gas _____
Listed as Toxic: Yes _____ No __X__

Status of Environmental Compliance (Past and Present):

At present, all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs, trichloroethylene and these are monitoring only requirements. The primary reason for this is that existing data does not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

There has been no known or suspected environmental impact due to the historic releases of this chemical.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Ethyl acetate
Uses: Solvent, paint, chemical laboratory uses
Solid _____ Liquid __X__ Gas _____.
Listed as Toxic: Yes __X__ No _____.

Status of Environmental Compliance (Past and Present):

At present, all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs, trichloroethylene and these are monitoring only requirements. The primary reason for this is that existing data does not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

There has been no known or suspected environmental impact due to the historic releases of this chemical.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Ethyl alcohol
Uses: Solvent, cleaner/sterilizer, chemical and biological laboratory uses
Solid _____ Liquid __X__ Gas _____.
Listed as Toxic: Yes __X__ No _____.

Status of Environmental Compliance (Past and Present):

At present, all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs, trichloroethylene and these are monitoring only requirements. The primary reason for this is that existing data does not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and tricnloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

The above named chemical was identified as a constitunet present in spill material that resulted in a fish-kill in White Oak Creek in 1983. See Appendix I for more details.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Ethyl, alcohol, denatured
Uses: Solvent, cleaner, chemical and biological laboratory uses
Solid _____ Liquid __X__ Gas _____.
Listed as Toxic: Yes __X__ No _____.

Status of Environmental Compliance (Past and Present):

At present, all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs, trichloroethylene and these are monitoring only requirements. The primary reason for this is that existing data does not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

There has been no known or suspected environmental impact due to the historic releases of this chemical.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Ethyl ether
Uses: Solvent, anesthetic, chemical laboratory uses
Solid _____ Liquid __X__ Gas _____.
Listed as Toxic: Yes __X__ No _____.

Status of Environmental Compliance (Past and Present):

At present, all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs, trichloroethylene and these are monitoring only requirements. The primary reason for this is that existing data does not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

There has been no known or suspected environmental impact due to the historic releases of this chemical.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Ethylene glycol
Uses: Antifreeze, coolant, chemical laboratory uses
Solid _____ Liquid __X__ Gas _____.
Listed as Toxic: Yes _____ No __X__.

Status of Environmental Compliance (Past and Present):

At present, all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs, trichloroethylene and these are monitoring only requirements. The primary reason for this is that existing data does not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

Four ethylene glycol spills took place due to mechanical failures or operator error on 2/13/80, 10/26/81, 7/2/84, and 10/24/85. These spills ranged in quantities from 7.57 L (2 gal) to 75,700 L (20,000 gal). There was no evidence of environmental impact.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine the level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.
- Plant & Equipment operating records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Ethylene oxide
Uses: Sterilant, chemical laboratory uses
Solid _____ Liquid _____ Gas __X__.
Listed as Toxic: Yes __X__ No _____.

Status of Environmental Compliance (Past and Present):

At present, all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs, trichloroethylene and these are monitoring only requirements. The primary reason for this is that existing data does not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

There has been no known or suspected environmental impact due to the historic releases of this chemical.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Ferric chloride
Uses: Chemical laboratory uses
Solid ___X___ Liquid _____ Gas _____.
Listed as Toxic: Yes ___X___ No _____.

Status of Environmental Compliance (Past and Present):

At present, all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs, trichloroethylene and these are monitoring only requirements. The primary reason for this is that existing data does not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

There has been no known or suspected environmental impact due to the historic releases of this chemical.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Ferric sulfate
Uses: Chemical laboratory uses
Solid ___X___ Liquid _____ Gas _____.
Listed as Toxic: Yes ___X___ No _____.

Status of Environmental Compliance (Past and Present):

At present, all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs, trichloroethylene and these are monitoring only requirements. The primary reason for this is that existing data does not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

There has been no known or suspected environmental impact due to the historic releases of this chemical.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Formaldehyde
Uses: Sterilant, tissue fixative, chemical laboratory uses
Solid _____ Liquid __X__ Gas _____.
Listed as Toxic: Yes __X__ No _____.

Status of Environmental Compliance (Past and Present):

At present, all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs, trichloroethylene and these are monitoring only requirements. The primary reason for this is that existing data does not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

There has been no known or suspected environmental impact due to the historic releases of this chemical.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Formamide
Uses: Chemical laboratory uses
Solid _____ Liquid __X__ Gas _____.
Listed as Toxic: Yes _____ No __X__.

Status of Environmental Compliance (Past and Present):

At present, all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs, trichloroethylene and these are monitoring only requirements. The primary reason for this is that existing data does not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

There has been no known or suspected environmental impact due to the historic releases of this chemical.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Hexane
Uses: Solvent, paints, chemical laboratory uses
Solid _____ Liquid __X__ Gas _____.
Listed as Toxic: Yes __X__ No _____.

Status of Environmental Compliance (Past and Present):

At present, all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs, trichloroethylene and these are monitoring only requirements. The primary reason for this is that existing data does not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

On 4/17/84, 0.47 L (1 pint) of hexane was spilled at Bldg. 7001. There was no environmental impact.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine the level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Hydrochloric acid
Uses: Cleaner, metal prep., chemical reagent
Solid _____ Liquid __X__ Gas _____.
Listed as Toxic: Yes __X__ No _____.

Status of Environmental Compliance (Past and Present):

At present, all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs, trichloroethylene and these are monitoring only requirements. The primary reason for this is that existing data does not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

There has been no known or suspected environmental impact due to the historic releases of this chemical.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Hydrofluoric acid:
Solid _____ Liquid __X__ Gas _____.
Listed as Toxic: Yes __X__ No _____.

Status of Environmental Compliance (Past and Present):

At present, all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs, trichloroethylene and these are monitoring only requirements. The primary reason for this is that existing data does not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

There has been no known or suspected environmental impact due to the historic releases of this chemical.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Hydrogen peroxide
Uses: Bleach, disinfectant, chemical uses
Solid ___X___ Liquid ___X___ Gas _____.
Listed as Toxic: Yes _____ No ___X___.

Status of Environmental Compliance (Past and Present):

At present, all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs, trichloroethylene and these are monitoring only requirements. The primary reason for this is that existing data does not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

There has been no known or suspected environmental impact due to the historic releases of this chemical.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Isopentane
Uses: Chemical laboratory uses
Solid _____ Liquid __X__ Gas _____.
Listed as Toxic: Yes __X__ No _____.

Status of Environmental Compliance (Past and Present):

At present all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs and trichlorethylene and these are monitoring only requirements. The primary reason for this is that existing data do not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

- No known or suspected environmental impacts.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine the level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Isopropyl alcohol
Uses: Solvent, paints, disinfectant, chemical laboratory uses
Solid _____ Liquid __X__ Gas _____.
Listed as Toxic: Yes __X__ No _____.

Status of Environmental Compliance (Past and Present):

At present all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs and trichlorethylene and these are monitoring only requirements. The primary reason for this is that existing data do not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

- No known or suspected environmental impacts.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine the level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.

CHEMICAL RELEASE DATA FORM

Chemical Name: 4,4' - Dichloro - α - trichloromethyl benzhydrol (Kelthane)

Uses: Insecticide

Solid X Liquid _____ Gas _____.

Listed as Toxic: Yes X No _____.

Status of Environmental Compliance (Past and Present):

At present all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs and trichlorethylene and these are monitoring only requirements. The primary reason for this is that existing data do not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

- No known or suspected environmental impacts.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine the level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.
- Plant and Equipment operating records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Lacquer thinner
Uses: Paints, coatings
Solid _____ Liquid __X__ Gas _____.
Listed as Toxic: Yes __X__ No _____.

Status of Environmental Compliance (Past and Present):

At present all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs and trichlorethylene and these are monitoring only requirements. The primary reason for this is that existing data do not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

- No known or suspected environmental impacts.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine the level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.

CHEMICAL RELEASE DATA FORM

Chemical Name: 2-Chloro-2',6'-diethyl-N(methoxy methyl) acetanilide (Lasso)

Uses: Herbicide

Solid ___X___ Liquid _____ Gas _____.

Listed as Toxic: Yes _____ No ___X___.

Status of Environmental Compliance (Past and Present):

At present all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs and trichlorethylene and these are monitoring only requirements. The primary reason for this is that existing data do not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

- No known or suspected environmental impacts.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine the level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.
- Plant and Equipment operating records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Lead sheet
Uses: Soldering, radiation shielding, alloys
Solid X Liquid _____ Gas _____.
Listed as Toxic: Yes X No _____.

Status of Environmental Compliance (Past and Present):

At present all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs and trichlorethylene and these are monitoring only requirements. The primary reason for this is that existing data do not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus tne limitations are not effective until that time.

During the operation of SWSA 6, mixed wastes containing lead were disposed by land burial. The implication of this information is that portions of SWSA 6 should be classified as RCRA disposal units.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

- No known or suspected environmental impacts.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine the level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Lindane
Uses: Pesticide
Solid _____ Liquid __X__ Gas _____.
Listed as Toxic: Yes __X__ No _____.

Status of Environmental Compliance (Past and Present):

At present all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs and trichlorethylene and these are monitoring only requirements. The primary reason for this is that existing data do not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

- No known or suspected environmental impacts.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine the level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.
- Plant and Equipment operating records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Magnesium nitrate
Uses: Chemical laboratory uses
Solid ___X___ Liquid _____ Gas _____.
Listed as Toxic: Yes ___X___ No _____.

Status of Environmental Compliance (Past and Present):

At present all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs and trichlorethylene and these are monitoring only requirements. The primary reason for this is that existing data do not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

- No known or suspected environmental impacts.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine the level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Malathion
Uses: Insecticide
Solid _____ Liquid __X__ Gas _____.
Listed as Toxic: Yes __X__ No _____.

Status of Environmental Compliance (Past and Present):

At present all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs and trichlorethylene and these are monitoring only requirements. The primary reason for this is that existing data do not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

- No known or suspected environmental impacts.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine the level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.
- Plant and Equipment operating records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Mercury
Uses: Lamps, batteries, gauges, instruments, chemical laboratory uses
Solid _____ Liquid __X__ Gas _____.
Listed as Toxic: Yes __X__ No _____.

Status of Environmental Compliance (Past and Present):

At present all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs and trichlorethylene and these are monitoring only requirements. The primary reason for this is that existing data do not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

There were twelve cases of recorded mercury spills at ORNL ranging from trace amounts to 0.1 kg (0.22 lb) between 1980 and 1985. There were no known environmental impacts from these spills.

There have been occasions at ORNL when pockets of mercury were discovered at pipes or under tiles. These small quantities are attributed to the processes which were undertaken at ORNL to support the Y-12 thermonuclear weapons program. These operations took place in the 1950s and 1960s at Bldgs. 4501, 3503, and 3592. Though there is not an accurate measure of the mercury loss at ORNL, operating personnel have estimated losses of 907 - 1361 kg (2000-3000 lb) due to spills and leakage.

In a recent study, soil samples collected around Bldg. 4501 contained mercury concentrations ranging from 0.05 to 4.4 ppm. However, one sample was as high as 465 ppm. Soil samples near Bldg. 3503 contained mercury concentrations ranging from 0.8 to 25 ppm and near Bldg. 3592 the samples ranged from 4.1 to 320 ppm.

Known or Suspected Environmental Impacts: (cont.)

Though there were individual fish samples with higher concentrations, all average values of mercury concentrations in Clinch River fish were below the Food and Drug Administration action level of 100 ng/g.

Mercury concentrations in water collected at White Oak Dam, White Oak Creek, and Melton Hill Dam were all higher than the Tennessee stream criteria. (Source: Environmental Monitoring Report, ORNL-6209).

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine the level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Methyl alcohol
Uses: Solvent, paint, fuel, coolant, chemical laboratory uses
Solid _____ Liquid __X__ Gas _____.
Listed as Toxic: Yes __X__ No _____.

Status of Environmental Compliance (Past and Present):

At present all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs and trichlorethylene and these are monitoring only requirements. The primary reason for this is that existing data do not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

- No known or suspected environmental impacts.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine the level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Methyl ethyl ketone
Uses: Solvent, paints, coatings, chemical laboratory uses
Solid _____ Liquid __X__ Gas _____.
Listed as Toxic: Yes __X__ No _____.

Status of Environmental Compliance (Past and Present):

At present all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs and trichlorethylene and these are monitoring only requirements. The primary reason for this is that existing data do not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

- No known or suspected environmental impacts.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine the level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.

CHEMICAL RELEASE DATA FORM

Chemical Name: p,p' - Diaminodiphenylmethane
Uses: Plastic coatings
Solid ___X___ Liquid _____ Gas _____.
Listed as Toxic: Yes _____ No ___X___.

Status of Environmental Compliance (Past and Present):

At present all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs and trichlorethylene and these are monitoring only requirements. The primary reason for this is that existing data do not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

- No known or suspected environmental impacts.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine the level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Methylene chloride
Uses: Solvent, paints, coatings, degreaser, chemical laboratory uses
Solid _____ Liquid __X__ Gas _____.
Listed as Toxic: Yes __X__ No _____.

Status of Environmental Compliance (Past and Present):

At present all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs and trichlorethylene and these are monitoring only requirements. The primary reason for this is that existing data do not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

The above named chemical was identified as a constituent present in spill material that resulted in a fish kill in White Oak Creek in 1983. See Appendix I for more details.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine the level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Metex Stripper
Uses: Metal cleaning
Solid _____ Liquid __X__ Gas _____.
Listed as Toxic: Yes _____ No __X__.

Status of Environmental Compliance (Past and Present):

At present all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs and trichlorethylene and these are monitoring only requirements. The primary reason for this is that existing data do not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

- No known or suspected environmental impacts.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine the level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Micro-bio-Treat [n-alkyl dimethyl benzylammonium (Bis (Tri-n-butyltin) oxide]
Uses: Control algae growth in cooling towers
Solid _____ Liquid __X__ Gas _____.
Listed as Toxic: Yes _____ No __X__.

Status of Environmental Compliance (Past and Present):

At present all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs and trichlorethylene and these are monitoring only requirements. The primary reason for this is that existing data do not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

Results of toxicity test using cooling tower effluents have indicated detrimental effects on acquatic test organisms. The use of this chemical for controlling algae growth in cooling towers has been terminated.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine the level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.
- Plant and Equipment operating records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Naptha
Uses: Solvent, paints, coatings, chemical laboratory uses
Solid _____ Liquid __X__ Gas _____.
Listed as Toxic: Yes __X__ No _____.

Status of Environmental Compliance (Past and Present):

At present all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs and trichlorethylene and these are monitoring only requirements. The primary reason for this is that existing data do not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

- No known or suspected environmental impacts.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine the level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Nickel Chloride
Uses: Metal plating, chemical laboratory uses
Solid ___X___ Liquid _____ Gas _____.
Listed as Toxic: Yes ___X___ No _____.

Status of Environmental Compliance (Past and Present):

At present all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs and trichlorethylene and these are monitoring only requirements. The primary reason for this is that existing data do not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

- No known or suspected environmental impacts.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine the level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Nickel sulfate
Uses: Metal plating, chemical laboratory uses
Solid ___X___ Liquid _____ Gas _____.
Listed as Toxic: Yes ___X___ No _____.

Status of Environmental Compliance (Past and Present):

At present all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs and trichlorethylene and these are monitoring only requirements. The primary reason for this is that existing data do not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

- No known or suspected environmental impacts.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine the level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Nitric acid
Uses: Cleaning, metal prep., chemical reagent
Solid _____ Liquid __X__ Gas _____.
Listed as Toxic: Yes __X__ No _____.

Status of Environmental Compliance (Past and Present):

At present, all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs, trichloroethylene and these are monitoring only requirements. The primary reason for this is that existing data does not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

Five different nitric acid spills, ranging from trace amounts to 3.79 L (1 gal), took place indoors. There was no environmental impact.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine the level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Nitric oxide
Uses: Chemical laboratory uses
Solid _____ Liquid _____ Gas __X__.
Listed as Toxic: Yes __X__ No _____.

Status of Environmental Compliance (Past and Present):

At present all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs and trichlorethylene and these are monitoring only requirements. The primary reason for this is that existing data do not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

- No known or suspected environmental impacts.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine the level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Acetylphosphoramidothioic acid, O,5-dimethyl ester (Orthene)
Uses: Insecticide
Solid X Liquid _____ Gas _____.
Listed as Toxic: Yes _____ No X.

Status of Environmental Compliance (Past and Present):

At present, all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs, trichloroethylene and these are monitoring only requirements. The primary reason for this is that existing data does not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

- No known or suspected environmental impacts.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine the level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.
- Plant & Equipment operating records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Pararosaniline
Uses: Dyes, chemical laboratory uses
Solid _____ Liquid __X__ Gas _____.
Listed as Toxic: Yes _____ No __X__.

Status of Environmental Compliance (Past and Present):

At present, all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs, trichloroethylene and these are monitoring only requirements. The primary reason for this is that existing data does not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

- No known or suspected environmental impacts.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine the level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Pentane
Uses: Solvent, chemical laboratory uses
Solid _____ Liquid __X__ Gas _____.
Listed as Toxic: Yes __X__ No _____.

Status of Environmental Compliance (Past and Present):

At present, all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs, trichloroethylene and these are monitoring only requirements. The primary reason for this is that existing data does not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

- No known or suspected environmental impact.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine the level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Perchloric acid
Uses: Chemical laboratory uses
Solid _____ Liquid __X__ Gas _____.
Listed as Toxic: Yes __X__ No _____.

Status of Environmental Compliance (Past and Present):

At present, all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs, trichloroethylene and these are monitoring only requirements. The primary reason for this is that existing data does not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

- No known or suspected environmental impact.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine the level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Petroleum ether
Uses: Solvent, chemical laboratory uses
Solid _____ Liquid __X__ Gas _____.
Listed as Toxic: Yes __X__ No _____.

Status of Environmental Compliance (Past and Present):

At present, all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs, trichloroethylene and these are monitoring only requirements. The primary reason for this is that existing data does not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

- No known or suspected environmental impact.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine the level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Phenol

Uses: Disinfectant, chemical laboratory uses

Solid __X__ Liquid _____ Gas _____.

Listed as Toxic: Yes __X__ No _____.

Status of Environmental Compliance (Past and Present):

At present, all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs, trichloroethylene and these are monitoring only requirements. The primary reason for this is that existing data does not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

- No known or suspected environmental impact.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine the level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Phenolic resin

Uses: Parts fabrication, potting for electronic circuits

Solid ___X___ Liquid _____ Gas _____.

Listed as Toxic: Yes _____ No ___X___.

Status of Environmental Compliance (Past and Present):

At present, all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs, trichloroethylene and these are monitoring only requirements. The primary reason for this is that existing data does not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

- No known or suspected environmental impact.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine the level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Phosphoric acid
Uses: Metal prep., cleaning, chemical reagent
Solid _____ Liquid __X__ Gas _____.
Listed as Toxic: Yes __X__ No _____.

Status of Environmental Compliance (Past and Present):

At present, all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs, trichloroethylene and these are monitoring only requirements. The primary reason for this is that existing data does not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

- No known or suspected environmental impact.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine the level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Polychlorinated biphenyls (PCBs)
Uses: Dielectric in electric equipment
Solid _____ Liquid __X__ Gas _____.
Listed as Toxic: Yes __X__ No _____.

Status of Environmental Compliance (Past and Present):

At present, all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs, trichloroethylene and these are monitoring only requirements. The primary reason for this is that existing data does not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

On May 6, 1981, and April 4, 1984, rupturing transformer incidents took place. In each case, oil from transformers were sprayed on desk tops, floors, and nearby personnel. Incidents occurred inside the buildings. Samples were taken and areas were decontaminated. In addition to these, two PCB oil spills and three light ballast leakages containing PCBs have occurred. There have been no known environmental consequences from these incidents. Further information on PCB related incidents is included in Appendix II.

According to the Environmental Monitoring Report, ORNL-6209 for 1984, PCB concentration in Clinch River fish at CRM 20.8 on the average were very close to background level and were below the 2 μg/g wet weight tolerance level designated by the Food and Drug Administration. The total PCB concentration in water collected about Melton Hill Dam was 0.00014 ppm.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine the level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.
- PCB Tracking System.

CHEMICAL RELEASE DATA FORM

Chemical Name: Potassium cyanide
Uses: Metal plating, chemical laboratory uses
Solid ___X___ Liquid _____ Gas _____.
Listed as Toxic: Yes ___X___ No _____.

Status of Environmental Compliance (Past and Present):

At present, all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs, trichloroethylene and these are monitoring only requirements. The primary reason for this is that existing data does not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

- No known or suspected environmental impact.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine the level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Potassium hydroxide
Uses: Plating, cleaning, chemical reagent
Solid ___X___ Liquid _____ Gas _____.
Listed as Toxic: Yes ___X___ No _____.

Status of Environmental Compliance (Past and Present):

At present, all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs, trichloroethylene and these are monitoring only requirements. The primary reason for this is that existing data does not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

On May 25, 1984, and April 9, 1986, 37.85 L (10 gal) and 1.9 L (0.5 gal) of potassium hydroxide were spilled within buildings 7000 and 7920. There were no environmental impacts.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine the level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.
- ORNL Waste Management operating records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Pramitol
Uses: Herbicide
Solid ___X___ Liquid _____ Gas _____.
Listed as Toxic: Yes _____ No _____.

Status of Environmental Compliance (Past and Present):

At present, all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs, trichloroethylene and these are monitoring only requirements. The primary reason for this is that existing data does not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

- No known or suspected environmental impact.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine the level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.
- Plant and Equipment operating records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Pyridine
Uses: Solvent, chemical laboratory uses
Solid _____ Liquid __X__ Gas _____.
Listed as Toxic: Yes __X__ No _____.

Status of Environmental Compliance (Past and Present):

At present, all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs, trichloroethylene and these are monitoring only requirements. The primary reason for this is that existing data does not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

- No known or suspected environmental impact.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine the level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Ronstar
Uses: Herbicide
Solid ___X___ Liquid _____ Gas _____.
Listed as Toxic: Yes _____ No ___X___.

Status of Environmental Compliance (Past and Present):

At present, all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs, trichloroethylene and these are monitoring only requirements. The primary reason for this is that existing data does not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

- No known or suspected environmental impact.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine the level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.
- Plant & Equipment operating records.

CHEMICAL RELEASE DATA FORM

Chemical Name: N-Phosphonomethyl glycine isopropylamine salt (Round-up)
Uses: Herbicide
Solid _____ Liquid __X__ Gas _____.
Listed as Toxic: Yes _____ No _____.

Status of Environmental Compliance (Past and Present):

At present, all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs, trichloroethylene and these are monitoring only requirements. The primary reason for this is that existing data does not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

- No known or suspected environmental impact.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine the level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.
- Plant & Equipment operating records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Silicon tetrafluoride
Uses: Chemical laboratory uses
Solid _____ Liquid _____ Gas __X__.
Listed as Toxic: Yes _____ No __X__.

Status of Environmental Compliance (Past and Present):

At present, all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs, trichloroethylene and these are monitoring only requirements. The primary reason for this is that existing data does not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

- No known or suspected environmental impact.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine the level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Silvex
Uses: Herbicide
Solid ___X___ Liquid _____ Gas _____.
Listed as Toxic: Yes ___X___ No _____.

Status of Environmental Compliance (Past and Present):

At present, all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs, trichloroethylene and these are monitoring only requirements. The primary reason for this is that existing data does not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

- No known or suspected environmental impact.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine the level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.
- Plant & Equipment operating records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Sodium bifluoride
Uses: Chemical laboratory uses
Solid ___X___ Liquid _____ Gas _____.
Listed as Toxic: Yes ___X___ No _____.

Status of Environmental Compliance (Past and Present):

At present, all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs, trichloroethylene and these are monitoring only requirements. The primary reason for this is that existing data does not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

- No known or suspected environmental impact.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine the level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) properlrespiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Sodium cyanide
Uses: Metal plating, chemical laboratory uses
Solid ___X___ Liquid _____ Gas _____.
Listed as Toxic: Yes ___X___ No _____.

Status of Environmental Compliance (Past and Present):

At present, all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs, trichloroethylene and these are monitoring only requirements. The primary reason for this is that existing data does not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

- No known or suspected environmental impact.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine the level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Sodium dithionite
Uses: Silver recovery, chemical laboratory uses
Solid ___X___ Liquid _____ Gas _____.
Listed as Toxic: Yes ___X___ No _____.

Status of Environmental Compliance (Past and Present):

At present, all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs, and trichloroethylene and these are monitoring only requirements. The primary reason for this is that existing data does not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

On 7/24/86 a sodium dithionite related spontaneous chemical reaction occurred at Bldg. 4500S. The vessel containing the reaction was removed from the building to an environmentally safe location and the incident resolved. No environmental impact is known from this accident.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine the level and type of worker protection. Standard measures for protection against this material include on or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage By ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.
- Silver Recovery processing records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Sodium hexametaphosphate
Uses: Cleaning, chemical laboratory uses
Solid __X__ Liquid _____ Gas _____.
Listed as Toxic: Yes _____ No __X__.

Status of Environmental Compliance (Past and Present):

At present, all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs, trichloroethylene and these are monitoring only requirements. The primary reason for this is that existing data does not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

- No known or suspected environmental impact.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine the level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Sodium Hydroxide
Uses: Cleaning, plating, chemical reagent
Solid ___X___ Liquid _____ Gas _____.
Listed as Toxic: Yes ___X___ No _____.

Status of Environmental Compliance (Past and Present):

At present, all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs, trichloroethylene and these are monitoring only requirements. The primary reason for this is that existing data does not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

Sodium hydroxide spilled during the filling of a tank inside Bldg. 3004 via a line from a tanker outside. Even though the tank was diked, 3.78 L (1 gal) of material was spilled outside the containment dike. Spill and washings caused NPDES noncompliance; however, it was only a temporary environmental impact.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine the level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal operations.
- Waste Management operating records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Sodium nitrate
Uses: Chemical laboratory uses
Solid X Liquid _____ Gas _____.
Listed as Toxic: Yes X No _____.

Status of Environmental Compliance (Past and Present):

At present, all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs, and trichloroethylene and these are monitoring only requirements. The primary reason for this is that existing data does not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroetnylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

There has been no known or suspected environmental impact due to the historic releases of this chemical.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine the level and type of worker protection. Standard measures for protection against this material include on or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage By ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Sodium sulfide
Uses: Chemical laboratory uses
Solid __X__ Liquid _____ Gas _____.
Listed as Toxic: Yes __X__ No _____.

Status of Environmental Compliance (Past and Present):

At present, all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs, and trichloroethylene and these are monitoring only requirements. The primary reason for this is that existing data does not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

There has been no known or suspected environmental impact due to the historic releases of this chemical.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine the level and type of worker protection. Standard measures for protection against this material include on or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage By ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Subdue E2
Uses: Fungicide
Solid X Liquid _____ Gas _____.
Listed as Toxic: Yes _____ No X.

Status of Environmental Compliance (Past and Present):

At present, all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs, and trichloroethylene and these are monitoring only requirements. The primary reason for this is that existing data does not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

There has been no known or suspected environmental impact due to the historic releases of this chemical.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine the level and type of worker protection. Standard measures for protection against this material include on or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage By ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.
- Plant & Equipment operating records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Sulfur hexafluoride
Uses: dielectric, tracer gas
Solid _____ Liquid _____ Gas __X__.
Listed as Toxic: Yes _____ No __X__.

Status of Environmental Compliance (Past and Present):

At present, all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs, and trichloroethylene and these are monitoring only requirements. The primary reason for this is that existing data does not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

There has been no known or suspected environmental impact due to the historic releases of this chemical.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine the level and type of worker protection. Standard measures for protection against this material include on or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage By ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Sulfuric acid
Uses: Cleaning, chemical laboratory uses
Solid _____ Liquid __X__ Gas _____.
Listed as Toxic: Yes __X__ No _____.

Status of Environmental Compliance (Past and Present):

At present, all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs, trichloroethylene and these are monitoring only requirements. The primary reason for this is that existing data does not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

On March 24, 1980, a 60.56 L (16 gal) spill of sulfuric acid was traced to Bldg. 3544. This spill caused an NPDES permit violation for pH. However, this was a temporary environmental impact.

Indoor spills on March 19, 1981, March 30, 1980, and April 11, 1986, of 22.71 L (6 gal); 3.79 L (1 gal); and 37.85 L (5-10 gal), respectively, of sulfuric acid were reported; however, there was no cause to believe they created an environmental impact.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine the level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.
- Waste Management operating records.

CHEMICAL RELEASE DATA FORM

Chemical Name: 4'-Bromo (1,1'-biphenyl)-4-yl (Talon)
Uses: Rodenticide
Solid ___X___ Liquid _____ Gas _____.
Listed as Toxic: Yes _____ No ___X___.

Status of Environmental Compliance (Past and Present):

At present, all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs, and trichloroethylene and these are monitoring only requirements. The primary reason for this is that existing data does not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

There has been no known or suspected environmental impact due to the historic releases of this chemical.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine the level and type of worker protection. Standard measures for protection against this material include on or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage By ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.
- Plant & Equipment operating records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Tetrachloroethylene
Uses: Cleaner, degreaser, chemical laboratory uses
Solid _____ Liquid __X__ Gas _____.
Listed as Toxic: Yes __X__ No _____.

Status of Environmental Compliance (Past and Present):

At present, all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs, and trichloroethylene and these are monitoring only requirements. The primary reason for this is that existing data does not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

There has been no known or suspected environmental impact due to the historic releases of this chemical.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine the level and type of worker protection. Standard measures for protection against this material include on or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage By ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Tetrahydrofuran
Uses: Solvent, chemical laboratory uses
Solid _____ Liquid __X__ Gas _____.
Listed as Toxic: Yes __X__ No _____.

Status of Environmental Compliance (Past and Present):

At present, all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs, and trichloroethylene and these are monitoring only requirements. The primary reason for this is that existing data does not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

There has been no known or suspected environmental impact due to the historic releases of this chemical.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine the level and type of worker protection. Standard measures for protection against this material include on or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage By ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Toluene
Uses: Solvent, paints, coatings, chemical laboratory uses, liquid, scintillation counting
Solid _____ Liquid __X__ Gas _____.
Listed as Toxic: Yes __X__ No _____.

Status of Environmental Compliance (Past and Present):

At present, all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs, trichloroethylene and these are monitoring only requirements. The primary reason for this is that existing data does not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

During the operation of SWSA 6, mixed wastes containing toluene were disposed by land burial. The implication of this information is that portions of SWSA 6 should be classified as RCRA disposal units.

Known or Suspected Public Health Impacts:

Known or Suspected Environmental Impacts:

The above named chemical was identified as a constituent present in spill material that resulted in a fish-kill in White Oak Creek in 1983. See Appendix I for more details. On May 11, 1983, 5.68 L (1.5 gal) of toluene was spilled at Bldg. 4500N. No environmental impact resulted.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine the level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Tributyl phosphate
Uses: Solvent, chemical laboratory uses
Solid _____ Liquid _____ Gas _____.
Listed as Toxic: Yes _____ No X.

Status of Environmental Compliance (Past and Present):

At present, all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs, and trichloroethylene and these are monitoring only requirements. The primary reason for this is that existing data does not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

A trace amount of this chemical was spilled at Bldg. 7001 on 11/28/84. There was no environmental impact.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine the level and type of worker protection. Standard measures for protection against this material include on or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage By ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Trichloroethylene
Uses: Solvent, paints, coatings, chemical laboratory uses, liquid scintillation counting
Solid _____ Liquid __X__ Gas _____.
Listed as Toxic: Yes __X__ No _____.

Status of Environmental Compliance (Past and Present):

At present, all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs, and trichloroethylene and these are monitoring only requirements. The primary reason for this is that existing data does not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

- No known or suspected environmental impacts.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine the level and type of worker protection. Standard measures for protection against this material include on or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage By ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Trichloromethylsilane
Uses: Solvent, chemical laboratory uses
Solid _____ Liquid __X__ Gas _____.
Listed as Toxic: Yes _____ No __X__.

Status of Environmental Compliance (Past and Present):

At present, all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs, and trichloroethylene and these are monitoring only requirements. The primary reason for this is that existing data does not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroetnylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

There has been no known or suspected environmental impact due to the historic releases of this chemical.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine the level and type of worker protection. Standard measures for protection against this material include on or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage By ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Triethanolamine
Uses: Cleaner, degreaser, chemical laboratory uses
Solid _____ Liquid __X__ Gas _____.
Listed as Toxic: Yes __X__ No _____.

Status of Environmental Compliance (Past and Present):

At present, all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs, and trichloroethylene and these are monitoring only requirements. The primary reason for this is that existing data does not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

There has been no known or suspected environmental impact due to the historic releases of this chemical.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine the level and type of worker protection. Standard measures for protection against this material include on or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage By ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Urethane
Uses: Solvent, chemical laboratory uses
Solid ___X___ Liquid _____ Gas _____.
Listed as Toxic: Yes _____ No ___X___.

Status of Environmental Compliance (Past and Present):

At present, all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs, and trichloroethylene and these are monitoring only requirements. The primary reason for this is that existing data does not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

There has been no known or suspected environmental impact due to the historic releases of this chemical.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine the level and type of worker protection. Standard measures for protection against this material include on or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage By ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Varsol
Uses: Solvent, cleaning
Solid _____ Liquid __X__ Gas _____.
Listed as Toxic: Yes __X__ No _____.

Status of Environmental Compliance (Past and Present):

At present, all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs, and trichloroethylene and these are monitoring only requirements. The primary reason for this is that existing data does not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

There has been no known or suspected environmental impact due to the historic releases of this chemical.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine the level and type of worker protection. Standard measures for protection against this material include on or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage By ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Vydate
Uses: Insecticide
Solid X Liquid _____ Gas _____.
Listed as Toxic: Yes _____ No X.

Status of Environmental Compliance (Past and Present):

At present, all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs, and trichloroethylene and these are monitoring only requirements. The primary reason for this is that existing data does not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

There has been no known or suspected environmental impact due to the historic releases of this chemical.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine the level and type of worker protection. Standard measures for protection against this material include on or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage By ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.
- Plant & Equipment operating records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Xylene
Uses: Cleaner, degreaser, chemical laboratory uses
Solid ___X___ Liquid ___X___ Gas _____.
Listed as Toxic: Yes ___X___ No _____.

Status of Environmental Compliance (Past and Present):

At present, all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs, and trichloroethylene and these are monitoring only requirements. The primary reason for this is that existing data does not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

The above named chemical was identified as a constituent present in spill materials that resulted in a fish-kill in White Oak Creek in 1983. See Appendix I for more details.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine the level and type of worker protection. Standard measures for protection against this material include on or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage By ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.

ATTACHMENT II

Estimated Chemical Usage

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (L)	Product	Airborne Release	Liquid Effluent	On-site Storage	On-site Burial	Off-site Burial	Other	Unknown
Acetone	1985	10,447						35 L		Records do
	1984	12,858						61 L		not exist
	1983	13,278						36 L		for the other
	1982	15,473								categories
	1980	16,858								

**"Off-site burial" does not necessarily imply that the wastes were managed by land based disposal. Treatment methods (incineration) has been utilized in some cases. This point is applicable throughout this report.

*The majority of solvent wastes occur as mixtures of several different chemicals and are managed as ignitable wastes (D001). These wastes are not mixed intentionally, rather, they are a result of the waste generating process.

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (L)	Product	Airborne Release	Liquid Effluent	On-site Storage	On-site Burial	Off-site Burial	Other	Unknown
Acetonitrile	1985	25,204						12 L		Records do not exist for the other categories
	1984	31,162						24 L		
	1983	26,930						13 L		
	1982	18,501								
	1981	14,020								
	1980	19,777								

*The majority of solvent wastes occur as mixtures of several different chemicals and are managed as ignitable wastes (D001). These wastes are not mixed intentionally, rather, they are a result of the waste generating process.

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (L)	Product	Airborne Release	Liquid Effluent	On-site Storage	On-site Burial	Off-site Burial	Other	Unknown
Acrylamide	1985	2						.5 kg		Records do not exist for the other categories
	1984	5						3 kg		
	1983	4						9 kg		
	1982	1,368								
	1981	10								

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (L)	Product	Airborne Release	Liquid Effluent	On-site Storage	On-site Burial	Off-site Burial	Other	Unknown
Aluminum nitrate	1985					2, 479 L		324 kg		Records do not exist for the other categories
	1984	3,818				Presently in storage		117 kg		
	1983	3,636						6 kg		

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (L)	Product	Airborne Release	Liquid Effluent	On-site Storage	On-site Burial	Off-site Burial	Other	Unknown
Ammonia, anhydrous	1985	3,330								Records do exist for the other categories
	1984	3,391								
	1983	5,993								
	1982	4,232								
	1981	3,634								
	1980	6,709								

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (L)	Product	Airborne Release	Liquid Effluent	On-site Storage	On-site Burial	Off-site Burial	Other	Unknown
Ammonium bifluoride	1985	15						6 kg		Records do not exist for tne other categories
	1984	69						< 1 kg		
	1983	70						< 1 kg		
	1982	198								
	1981	305								
	1980	657								

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (L)	Product	Airborne Release	Liquid Effluent	On-site Storage	On-site Burial	Off-site Burial	Other	Unknown
Ammonium hydroxide	1985	1,135						28 kg		Records do not exist for tne other categories
	1984	1,524						277 kg		
	1983	2,053						309 kg		
	1982	1,666								
	1981	1,540								
	1980	2,549								

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (L)	Product	Airborne Release	Liquid Effluent	On-site Storage	On-site Burial	Off-site Burial	Other	Unknown
Ammonium nitrate	1985	281						4 kg		Records do not exist for the other categories
	1984	255						4 kg		
	1983	200						2 kg		
	1982	826								
	1981	270								
	1980	2,613								

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (L)	Product	Airborne Release	Liquid Effluent	On-site Storage	On-site Burial	Off-site Burial	Other	Unknown
Asbestos-Containing Materials										
- Felt Roofing	1985	972 m^2				1985	241 m^2 On-site burial			
	1984	640 m^2					1,426 m On-site burial			
	1983	126 m^2				1984	28 m^2 On-site burial			
	1982	1,655 m^2					2,982 m On-site burial			
	1981	2,173 m^2				1983	274 m^2 On-site burial			
	1980	3,060 m^2					1,954 m On-site burial			
- Sheet Roofing	1985	1,795 m^2								
	1984	1,541 m^2								
	1983	1,463 m^2								
	1982	702 m^2								
	1981	488 m^2								
	1980	410 m^2								
- Tape	1984	56 rolls								
	1983	48 rolls								
	1982	15 rolls								
	1981	38 rolls								
	1980	89 rolls								

*There are unknown quantities of asbestos-containing insulation throughout ORNL. A major effort has been made during the last 3-4 years to identify these areas, remove the asbestos-containing insulation, dispose of properly, and replace with nonasbestos insulation.

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (L)	Product	Airborne Release	Liquid Effluent	On-site Storage	On-site Burial	Off-site Burial	Other	Unknown
Asbestos-Containing Materials (cont.)										
- Insulated Wire	1985	53m								
	1984	295m								
	1983	189m								
	1982	165m								
	1981	456m								
	1980	491m								
- Gaskets	1985	3,193 ea								
	1984	3,669 ea								
	1983	3,396 ea								
	1982	2,408 ea								
	1981	2,337 ea								
	1980	2,450 ea								
- Packing	1985	264m^2 166 kg								
	1984	270m^2 220 kg								
	1983	319m^2 94 kg								
	1982	319m^2 94 kg								
	1981	384m^2 155 kg								

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (L)	Product	Airborne Release	Liquid Effluent	On-site Storage	On-site Burial	Off-site Burial	Other	Unknown
Barium octahydrate	1981	1,918								Records do not exist for the other categories

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (L)	Product	Airborne Release	Liquid Effluent	On-site Storage	On-site Burial	Off-site Burial	Other	Unknown
Baygon (N-Methyl carbamate)	1984	15								Records do not exist for the other categories

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (L)	Product	Airborne Release	Liquid Effluent	On-site Storage	On-site Burial	Off-site Burial	Other	Unknown
Benzene	1985	238						37 L		Records do not exist for the other categories
	1984	110						43 L		
	1983	246						38 L		
	1982	530								
	1981	708								
	1980	757								

*The majority of solvent wastes occur as mixtures of several different chemicals and are managed as ignitable wastes (D001). These wastes are not mixed intentionally, rather, they are a result of the waste generating process.

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (L)	Product	Airborne Release	Liquid Effluent	On-site Storage	On-site Burial	Off-site Burial	Other	Unknown
Cadmium nitrate	1985						< 1 kg			Records do not exist for the other categories
	1984	91					< 1 kg			
	1983						< 1 kg			
	1982	91								
	1981	1								

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (L)	Product	Airborne Release	Liquid Effluent	On-site Storage	On-site Burial	Off-site Burial	Other	Unknown
Calcium hypochlorite	1985	1,216						8 kg		Records do not exist for the other categories
	1984	936						5 kg		
	1983	952								
	1982	1,095								
	1981	1,772								
	1980	1,325								

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (L)	Product	Airborne Release	Liquid Effluent	On-site Storage	On-site Burial	Off-site Burial	Other	Unknown
Carbon monoxide	1985	13								Records do not exist for the other categories
	1984	27								
	1983	54								
	1982	59								
	1981	63								
	1980	50								

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (L)	Product	Airborne Release	Liquid Effluent	On-site Storage	On-site Burial	Off-site Burial	Other	Unknown
Carbon tetrachloride	1985	117								
	1984	273						29 L		Records do not exist for the other categories
	1983	204						64 L		
	1982	208								
	1981	341								
	1980	356								

*The majority of solvent wastes occur as mixtures of several different chemicals and are managed as ignitable wastes (D001). These wastes are not mixed intentionally, rather, they are a result of the waste generating process.

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (L)	Product	Airborne Release	Liquid Effluent	On-site Storage	On-site Burial	Off-site Burial	Other	Unknown
Chlordane	1983							19 L		Records do not exist for the other categories
	1984	189								

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (L)	Product	Airborne Release	Liquid Effluent	On-site Storage	On-site Burial	Off-site Burial	Other	Unknown
Chlorine, gas	1985	3,772								
	1984	3,363								
	1983	3,568								
	1982	2,681								
	1981	2,554								
	1980	3,295								
	1950-1979	1,590/yr.	Approximately 1590 kg is used to treat the the Sewage Treatment Plant effluent							

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (L)	Product	Airborne Release	Liquid Effluent	On-site Storage	Un-site Burial	Off-site Burial	Other	Unknown
Chloroform	1985	159						19 L		Records do not exist for the other categories
	1984	121						37 L		
	1983	114						68 L		
	1982	246								
	1981	261								
	1980	167								

*The majority of solvent wastes occur as mixtures of several different chemicals and are managed as ignitable wastes (D001). These wastes are not mixed intentionally, rather, they are a result of the waste generating process.

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (L)	Product	Airborne Release	Liquid Effluent	On-site Storage	On-site Burial	Off-site Burial	Other	Unknown
Chlorpyrifos (Bolt)	1982	76								Records do not exist for the other categories
	1981	61								

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (L)	Product	Airborne Release	Liquid Effluent	On-site Storage	On-site Burial	Off-site Burial	Other	Unknown
Chromic acid	1985	886						606 L		Records do not exist for the other categories
	1984	787						77 L		
	1983	1,911						188 L		
	1982	806								
	1981	2,502								
	1980	1,590								

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (L)	Product	Airborne Release	Liquid Effluent	On-site Storage	On-site Burial	Off-site Burial	Other	Unknown
Coal-oil mixture	1982	18,925								Records do not exist for the other categories

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (L)	Product	Airborne Release	Liquid Effluent	On-site Storage	On-site Burial	Off-site Burial	Other	Unknown
Coal Tar Pitch	1984	15,405								Records do not exist for the other categories
	1983	4,164								
	1981	2,445						103 L		

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (L)	Product	Airborne Release	Liquid Effluent	On-site Storage	On-site Burial	Off-site Burial	Other	Unknown
Cyclohexane	1985	30						21 L		Records do
	1984	64						20 L		not exist for
	1983	61						8 L		the other
	1982	102								categories
	1981	129								

*The majority of solvent wastes occur as mixtures of several different chemicals and are managed as ignitable wastes (D001). These wastes are not mixed intentionally, rather, they are a result of the waste generating process.

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (L)	Product	Airborne Release	Liquid Effluent	On-site Storage	On-site Burial	Off-site Burial	Other	Unknown
Diazinon	1983	19								Records do not exist for the other categories

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (L)	Product	Airborne Release	Liquid Effluent	On-site Storage	On-site Burial	Off-site Burial	Other	Unknown
2,4-Dichloropenoxy acetic acid	1983	189								Records do not exist for the other categories

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (L)	Product	Airborne Release	Liquid Effluent	On-site Storage	On-site Burial	Off-site Burial	Other	Unknown
Diethylbenzene	1985							95 kg		Records do not exist for the other categories
	1984	3								
	1983	2,182								

*The majority of solvent wastes occur as mixtures of several different chemicals and are managed as ignitable wastes (D001). These wastes are not mixed intentionally, rather, they are a result of the waste generating process.

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (L)	Product	Airborne Release	Liquid Effluent	On-site Storage	On-site Burial	Off-site Burial	Other	Unknown
Diethylenetriamine pentacetic sodium salt	1984	545								Records do not exist for the other categories

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (L)	Product	Airborne Release	Liquid Effluent	On-site Storage	On-site Burial	Off-site Burial	Other	Unknown
1,4-Dioxane	1985	8						20 L		Records do
	1984	45						77 L		not exist for
	1983	23						80 L		the other
	1982	61								categories
	1981	19								

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (L)	Product	Airborne Release	Liquid Effluent	On-site Storage	On-site Burial	Off-site Burial	Other	Unknown
Disulfoton (Disyston G)	1982	5								Records do not exist for the other categories

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (L)	Product	Airborne Release	Liquid Effluent	On-site Storage	On-site Burial	Off-site Burial	Other	Unknown
Dodecane	1984	1,457					.5 L			Records do not exist for the other categories
	1983	1,673					3 L			
	1982	11								

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (L)	Product	Airborne Release	Liquid Effluent	On-site Storage	On-site Burial	Off-site Burial	Other	Unknown
Endcor	1984	5,413				15,540 L				Records do not exist for the other categories
	1983	5,413				Presently in storage				

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (L)	Product	Airborne Release	Liquid Effluent	On-site Storage	On-site Burial	Off-site Burial	Other	Unknown
Epoxy Resins	1985	379						19 L		Records do
	1984	36						69 L		not exist for
	1983	19						235 L		the other
	1981	19								categories

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (L)	Product	Airborne Release	Liquid Effluent	On-site Storage	On-site Burial	Off-site Burial	Other	Unknown
Ethyl acetate	1985	261						3 L		Records do
	1984	322						16 L		not exist for
	1983	435						91 L		the other
	1982	250								categories
	1981	231								
	1980	288								

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (L)	Product	Airborne Release	Liquid Effluent	On-site Storage	On-site Burial	Off-site Burial	Other	Unknown
Ethyl alcohol	1985	4,648						5 L		Records do not exist for the other categories
	1984	4,444						17 L		
	1983	4,943						45 L		
	1982	8,017								
	1981	12,438								
	1980	12,260								

*The majority of solvent wastes occur as mixtures of several different chemicals and are managed as ignitable wastes (D001). These wastes are not mixed intentionally, rather, they are a result of the waste generating process.

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (L)	Product	Airborne Release	Liquid Effluent	On-site Storage	On-site Burial	Off-site Burial	Other	Unknown
Ethyl alcohol, denatured	1985	2,354								Records do not exist for the other categories
	1984	3,164								
	1983	3,679								
	1982	1,980								
	1981	2,048								
	1980	1,858								

*The majority of solvent wastes occur as mixtures of several different chemicals and are managed as ignitable wastes (D001). These wastes are not mixed intentionally, rather, they are a result of the waste generating process.

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (L)	Product	Airborne Release	Liquid Effluent	On-site Storage	On-site Burial	Off-site Burial	Other	Unknown
Ethyl ether	1985	305						6 kg		Records do not exist for the other categories
	1984	495						30 kg		
	1983	455						36 kg		
	1982	745								
	1981	707								
	1980	355								

*The majority of solvent wastes occur as mixtures of several different chemicals and are managed as ignitable wastes (D001). These wastes are not mixed intentionally, rather, they are a result of the waste generating process.

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (L)	Product	Airborne Release	Liquid Effluent	On-site Storage	On-site Burial	Off-site Burial	Other	Unknown
Ethylene glycol	1985	16,484						5 L		Records do not exist for the other categories
	1984	18,683						1488 L		
	1983	27,392						900 L		
	1982	18,895								
	1981	18.679								
	1980	14,296								

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (L)	Product	Airborne Release	Liquid Effluent	On-site Storage	On-site Burial	Off-site Burial	Other	Unknown
Ethylene oxide	1985	9								Records do not exist for the other categories
	1984	41								
	1983	27								
	1981	23								

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (L)	Product	Airborne Release	Liquid Effluent	On-site Storage	On-site Burial	Off-site Burial	Other	Unknown
Ferric chloride	1985	705						< 1 kg		Records do not exist for the other categories
	1984	216						48 kg		
	1983	628						11 kg		
	1982	894								
	1981	1,227								
	1980	1,255								

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (L)	Product	Airborne Release	Liquid Effluent	On-site Storage	On-site Burial	Off-site Burial	Other	Unknown
Ferric sulfate	1985					1136 L		< 1 kg		Records do
	1984					Presently in		95 kg		not exist for
	1983					storage		< 1 kg		the other
	1981	1,000								categories

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (L)	Product	Airborne Release	Liquid Effluent	On-site Storage	On-site Burial	Off-site Burial	Other	Unknown
Formaldehyde	1985	503						3 L		Records do
	1984	284						21 L		not exist for
	1983	47						9 L		the other
	1982	121								categories
	1981	121								
	1980	98								

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (L)	Product	Airborne Release	Liquid Effluent	On-site Storage	On-site Burial	Off-site Burial	Other	Unknown
Formamide	1985	4						10 L		Records do not exist for the other categories
	1984	34						5 L		
	1983	8						9 L		
	1982	416								
	1981	8								

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (L)	Product	Airborne Release	Liquid Effluent	On-site Storage	On-site Burial	Off-site Burial	Other	Unknown
Hexane	1985	628						39 L		Records do not exist for the other categories
	1984	1,272						41 L		
	1983	1,014						52 L		
	1982	1,313								
	1981	1,075								
	1980	1,188								

*The majority of solvent wastes occur as mixtures of several different chemicals and are managed as ignitable wastes (D001). These wastes are not mixed intentionally, rather, they are a result of the waste generating process.

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (L)	Product	Airborne Release	Liquid Effluent	On-site Storage	On-site Burial	Off-site Burial	Other	Unknown
Hydrochloric acid	1985	669,415						25 L		Records do not exist for the other categories
	1984	647,076						73 L		
	1983	843,888						123 L		
	1982	219,295								
	1981	120,564								
	1980	132,906								

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (L)	Product	Airborne Release	Liquid Effluent	On-site Storage	On-site Burial	Off-site Burial	Other	Unknown
Hydrofluoric acid	1985	921						5 kg		Records do not exist for the other categories
	1984	1,230						26 kg		
	1983	1,262						2 kg		
	1982	940								
	1981	1,402								
	1980	1,130								

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (L)	Product	Airborne Release	Liquid Effluent	On-site Storage	On-site Burial	Off-site Burial	Other	Unknown
Hydrogen peroxide	1985	1,341						7 kg		Records do not exist for the other categories
	1984	2,020						1 kg		
	1983	1,884						13 kg		
	1982	2,137								
	1981	1,785								
	1980	3,296								

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (L)	Product	Airborne Release	Liquid Effluent	On-site Storage	On-site Burial	Off-site Burial	Other	Unknown
Isopentane	1985	409								Records do not exist for the other categories

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (L)	Product	Airborne Release	Liquid Effluent	On-site Storage	On-site Burial	Off-site Burial	Other	Unknown
Isopropyl alcohol	1985	5,988								Records do not exist for the other categories
	1984	10,628						628 L		
	1983	13,263						4 L		
	1982	14,599								
	1981	13,963								
	1980	20,787								

*The majority of solvent wastes occur as mixtures of several different chemicals and are managed as ignitable wastes (D001). These wastes are not mixed intentionally, rather, they are a result of the waste generating process.

Estimated Distribution in %

Chemical Name	Year	Quantity Used (L)	Product	Airborne Release	Liquid Effluent	On-site Storage	On-site Burial	Off-site Burial	Other	Unknown
Kelthane (4,4'-Dichloro-α-trichloromethyl benzhydrol)	1985 1983	19						7 L		Records do not exist for the other categories

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (L)	Product	Airborne Release	Liquid Effluent	On-site Storage	On-site Burial	Off-site Burial	Other	Unknown
Lacquer thinner	1985	6,226						2 L		Records do not exist for the other categories
	1984	6,942						19 L		
	1983	7,684								
	1982	8,123								
	1981	9,459								
	1980	10,337								

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (L)	Product	Airborne Release	Liquid Effluent	On-site Storage	On-site Burial	Off-site Burial	Other	Unknown
Lasso (2-Chloro-2',6'-diethyl-N-Methoxymethyl acetanilide)	1982	9								Records do not exist for the other categories

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (kg)	Product	Airborne Release	Liquid Effluent	On-site Storage	On-site Burial	Off-site Burial	Other	Unknown
Lead, sheet	1985	3,238								Records do not exist for the other categories
	1984	4,934								
	1983	6,892								
	1982	6,095								
	1981	3,920								
	1980	5,471								

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (kg)	Product	Airborne Release	Liquid Effluent	On-site Storage	On-site Burial	Off-site Burial	Other	Unknown
Lindane	1983	1								Records do not exist for the other categories

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (kg)	Product	Airborne Release	Liquid Effluent	On-site Storage	On-site Burial	Off-site Burial	Other	Unknown
Magnesium nitrate	1985	91						< 1 kg		Records do not exist for the other categories
	1984	727						1 kg		
	1982	12						< 1 kg		

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (kg)	Product	Airborne Release	Liquid Effluent	On-site Storage	On-site Burial	Off-site Burial	Other	Unknown
Malathion	1983	76								Records do not exist for the other categories
	1982	76								
	1981	91								

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (kg)	Product	Airborne Release	Liquid Effluent	On-site Storage	On-site Burial	Off-site Burial	Other	Unknown
Mercury	1985	97						225 kg		Records do not exist for the other categories
	1984	139						43 kg		
	1983	322						75 kg		
	1982	250								
	1981	304								
	1980	576								

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (kg)	Product	Airborne Release	Liquid Effluent	On-site Storage	On-site Burial	Off-site Burial	Other	Unknown
Methyl alcohol	1985	108,970						22 L		Records do not exist for the other categories
	1984	92,702								
	1983	95,390						26 L		
	1982	141,847								
	1981	122,411								
	1980	278,883								

*The majority of solvent wastes occur as mixtures of several different chemicals and are managed as ignitable wastes (D001). These wastes are not mixed intentionally, rather, they are a result of the waste generating process.

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (kg)	Product	Airborne Release	Liquid Effluent	On-site Storage	On-site Burial	Off-site Burial	Other	Unknown
Methyl ethyl ketone	1985	575						4 L		Records do not exist for the other categories
	1984	689						21 L		
	1983	1,628						14 L		
	1982	1,949								
	1981	3,009								
	1980	2,157								

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ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (kg)	Product	Airborne Release	Liquid Effluent	On-site Storage	On-site Burial	Off-site Burial	Other	Unknown
P,P'-Diamino-diphenylmethane	1984	91								Records do not exist for the other categories

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (kg)	Product	Airborne Release	Liquid Effluent	On-site Storage	On-site Burial	Off-site Burial	Other	Unknown
Methylene chloride	1985	9,470								Records do not exist for the other categories
	1984	9,746								
	1983	13,017						4 L		
	1982	15,333								
	1981	9,637								
	1980	10,201								

*The majority of solvent wastes occur as mixtures of several different chemicals and are managed as ignitable wastes (D001). These wastes are not mixed intentionally, rather, they are a result of the waste generating process.

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (kg)	Product	Airborne Release	Liquid Effluent	On-site Storage	On-site Burial	Off-site Burial	Other	Unknown
Metex Stripper	1985	364								Records do not exist for the other categories
	1984	364								
	1983	364								
	1982	364								
	1981	1,091								
	1980	800								

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (kg)	Product	Airborne Release	Liquid Effluent	On-site Storage	On-site Burial	Off-site Burial	Other	Unknown
Micro-Bio-Treat	1983	2,574								Records do not exist for for the other categories
	1982	2,082								
	1981	416								

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (kg)	Product	Airborne Release	Liquid Effluent	On-site Storage	On-site Burial	Off-site Burial	Other	Unknown
Naphtha	1985	6,245								Records do not exist for the other categories
	1984	4,788								
	1983	6,037						4 L		
	1982	3,331								
	1981	2,498								
	1980	1,665								

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ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (kg)	Product	Airborne Release	Liquid Effluent	On-site Storage	On-site Burial	Off-site Burial	Other	Unknown
Nickel chloride	1985	136						< 1 kg		Records do not exist for the other categories
	1984	545						209 kg		
	1983	2,250						17 kg		
	1982	165								
	1981	265								
	1980	1,444								

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (kg)	Product	Airborne Release	Liquid Effluent	On-site Storage	On-site Burial	Off-site Burial	Other	Unknown
Nickel sulfate	1985							< 1 kg		Records do not exist for the other categories
	1984	173						< 1 kg		
	1983	236						14 kg		
	1982	227								
	1981	827								
	1980	1,127								

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (kg)	Product	Airborne Release	Liquid Effluent	On-site Storage	On-site Burial	Off-site Burial	Other	Unknown
Nitric acid	1985	10,647				106,832 L		4 L		Records do not exist for the other categories
	1984	17,895				Presently		188 L		
	1983	17,036				in storage		920 L		
	1982	20,352								
	1981	22,581								
	1980	23,679								

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (kg)	Product	Airborne Release	Liquid Effluent	On-site Storage	On-site Burial	Off-site Burial	Other	Unknown
Nitric oxide	1985	3								Records do not exist for the other categories
	1984	2								
	1983	12								
	1982	4								

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (kg)	Product	Airborne Release	Liquid Effluent	On-site Storage	On-site Burial	Off-site Burial	Other	Unknown
Orthene (Acetyl-phosphoramido-thioic acid-O,5-dimethyl ester)	1983 1982 1981	2 1 1								Records do not exist for the other categories

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (kg)	Product	Airborne Release	Liquid Effluent	On-site Storage	On-site Burial	Off-site Burial	Other	Unknown
Pararosaniline	1985	15								Records do not exist for the other categories
	1984	42						236 L		
	1983	19						208 L		
	1982	4								
	1981	4								

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (kg)	Product	Airborne Release	Liquid Effluent	On-site Storage	On-site Burial	Off-site Burial	Other	Unknown
Pentane	1984	30						1 L		Records do not exist for the other categories
	1983	38								
	1982	76								
	1981	238								

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (kg)	Product	Airborne Release	Liquid Effluent	On-site Storage	On-site Burial	Off-site Burial	Other	Unknown
Perchloric acid	1985	494						12 kg		Records do not exist for the other categories
	1984	290						6 kg		
	1983	279						34 kg		
	1982	358								
	1981	306								
	1980	291								

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (kg)	Product	Airborne Release	Liquid Effluent	On-site Storage	On-site Burial	Off-site Burial	Other	Unknown
Petroleum ether	1985	193								Records do not exist for the other categories
	1984	189						16 L		
	1983	238						24 L		
	1982	314								
	1981	193								
	1980	379								

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ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (kg)	Product	Airborne Release	Liquid Effluent	On-site Storage	On-site Burial	Off-site Burial	Other	Unknown
Phenol	1985	29						9 kg		Records do not exist for the other categories
	1984	40						78 kg		
	1983	22						56 kg		
	1982	40								
	1981	77								
	1980	35								

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (kg)	Product	Airborne Release	Liquid Effluent	On-site Storage	On-site Burial	Off-site Burial	Other	Unknown
Phenolic resin	1985	91								Records do not exist for the other categories

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (kg)	Product	Airborne Release	Liquid Effluent	On-site Storage	On-site Burial	Off-site Burial	Other	Unknown
Phosphoric acid	1985	2,035						11 kg		Records do not exist for the other categories
	1984	2,843						60 kg		
	1983	3,047						28 kg		
	1982	214								
	1981	170								
	1980	882								

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (kg)	Product	Airborne Release	Liquid Effluent	On-site Storage	On-site Burial	Off-site Burial	Other	Unknown
Polychlorinated biphenyls (PCBs)	1985							5,616 kg		
	1984							18,000 kg		
	1983							5,800 kg		

*There is approximately 25,200 L (> 500 ppm) and 3,017 L (50-500 ppm) PCB containing oils currently in use in various transformers and other electrical equipment.

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (kg)	Product	Airborne Release	Liquid Effluent	On-site Storage	On-site Burial	Off-site Burial	Other	Unknown
Potassium cyanide	1985							1 kg		Records do not exist for the other categories
	1984	86						2 kg		
	1983	91						20 kg		
	1981	23								

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (kg)	Product	Airborne Release	Liquid Effluent	On-site Storage	On-site Burial	Off-site Burial	Other	Unknown
Potassium hydroxide	1985	113,220						8 kg		Records do not exist for the other categories
	1984	157,750						27 kg		
	1983	60,597						28 kg		
	1982	48,674								
	1981	92,850								
	1980	84,586								
	1970-1985	8,180/yr.	Used for cleaning scrubbers							

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (kg)	Product	Airborne Release	Liquid Effluent	On-site Storage	On-site Burial	Off-site Burial	Other	Unknown
Pramitol	1983	227								Records do not exist for the other categories

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (kg)	Product	Airborne Release	Liquid Effluent	On-site Storage	On-site Burial	Off-site Burial	Other	Unknown
Pyridine	1985							13 L		Records do not exist for the other categories
	1984							7 L		
	1983							17 L		
	1982	72								
	1981	87								

ESTIMATED CHEMICAL USAGE

Chemical Name	Year	Quantity Used (kg)	Product	Estimated Distribution in %						
				Airborne Release	Liquid Effluent	On-site Storage	On-site Burial	Off-site Burial	Other	Unknown
Ronstar	1983	455								Records do not exist for the other categories

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (kg)	Product	Airborne Release	Liquid Effluent	On-site Storage	On-site Burial	Off-site Burial	Other	Unknown
Round-up (N-phosphono-methyl glycine isopropylamine salt)	1984	11								Records do not exist for the other categories
	1983	182								
	1982	38								

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (kg)	Product	Airborne Release	Liquid Effluent	On-site Storage	On-site Burial	Off-site Burial	Other	Unknown
Silicon tetraflouride	1982	3,125								Records do not exist for the other categories

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (kg)	Product	Airborne Release	Liquid Effluent	On-site Storage	On-site Burial	Off-site Burial	Other	Unknown
Silvex	1983	284								Records do not exist for the other categories

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (kg)	Product	Airborne Release	Liquid Effluent	On-site Storage	On-site Burial	Off-site Burial	Other	Unknown
Sodium bifluoride	1985	955								Records do not exist for the other categories
	1983	1,510								
	1982	1,318								
	1981	1,091								
	1980	1,500								

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (kg)	Product	Airborne Release	Liquid Effluent	On-site Storage	On-site Burial	Off-site Burial	Other	Unknown
Sodium cyanide	1985	92						1 kg		Records do not exist for the other categories
	1984	2						3 kg		
	1983	1,002						3 kg		
	1982	365								
	1981	182								
	1980	727								

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (kg)	Product	Airborne Release	Liquid Effluent	On-site Storage	On-site Burial	Off-site Burial	Other	Unknown
Sodium dithionite	1985	227						< 1 kg		Records do not exist for the other categories
	1984	455						< 1 kg		
	1983	114								
	1982	12								

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (kg)	Product	Airborne Release	Liquid Effluent	On-site Storage	On-site Burial	Off-site Burial	Other	Unknown
Sodium hexameta-phosphate	1981	455								Records do not exist for the other categories

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (kg)	Product	Airborne Release	Liquid Effluent	On-site Storage	On-site Burial	Off-site Burial	Other	Unknown
Sodium hydroxide	1985	106,138				64, 534 L	19 kg			Records do not exist for the other categories
	1984	97,897				Presently	75 kg			
	1983	75,132				in storage	48 kg			
	1982	53,889								
	1981	35,462								
	1980	26,129								
	1943-1979	940/yr	Steam Plant Operations							

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (kg)	Product	Airborne Release	Liquid Effluent	On-site Storage	On-site Burial	Off-site Burial	Other	Unknown
Sodium nitrate	1985	17,070					2 kg			Records do not exist for the other categories
	1984	9,815					53 kg			
	1983	13,883					3 kg			
	1982	10,248								
	1981	9,025								
	1980	10,215								

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (kg)	Product	Airborne Release	Liquid Effluent	On-site Storage	On-site Burial	Off-site Burial	Other	Unknown
Sodium sulfide	1985 1984 1983	500					3 kg 4 kg 3 kg			Records do not exist for the other categories

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (kg)	Product	Airborne Release	Liquid Effluent	On-site Storage	On-site Burial	Off-site Burial	Other	Unknown
Subdue E2	1982	4								Records do not exist for the other categories

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (kg)	Product	Airborne Release	Liquid Effluent	On-site Storage	On-site Burial	Off-site Burial	Other	Unknown
Sulfur hexafluoride	1981	7,214								Records do not exist for the other categories

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (kg)	Product	Airborne Release	Liquid Effluent	On-site Storage	On-site Burial	Off-site Burial	Other	Unknown
Sulfuric acid	1985	7,305				41,143 L Presently in storage	7 L			Records do not exist for the other categories
	1984	9,606					75 L			
	1983	11,582					81 L			
	1982	5,185								
	1981	5,042								
	1980	7,244								
	1943-1979	3,800/yr	Steam Plant Operations							

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (kg)	Product	Airborne Release	Liquid Effluent	On-site Storage	On-site Burial	Off-site Burial	Other	Unknown
Talon (4'-Bromo (1,1'-biphenyl-4-yl)	1984	23								Records do not exist for the other categories
	1982	23								
	1981	23								

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (kg)	Product	Airborne Release	Liquid Effluent	On-site Storage	On-site Burial	Off-site Burial	Other	Unknown
Tetrachloro-ethylene	1985	256,918								Records do not exist for the other categories
	1984	354,208								
	1983	384,049								
	1982	441,278								
	1981	347,872								
	1980	362,997								

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ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (kg)	Product	Airborne Release	Liquid Effluent	On-site Storage	On-site Burial	Off-site Burial	Other	Unknown
Tetrahyodro-furan	1985	185								Records do not exist for the other categories
	1984	216						15 L		
	1983	216						8 L		
	1982	428								
	1981	450								
	1980	515								

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (kg)	Product	Airborne Release	Liquid Effluent	On-site Storage	On-site Burial	Off-site Burial	Other	Unknown
Toluene	1985	761						223 L		Records do not exist for the other categories
	1984	1,014						33 L		
	1983	1,347						81 L		
	1982	1,359								
	1981	2,142								
	1980	2,657								

*The majority of solvent wastes occur as mixtures of several different chemicals and are managed as ignitable wastes (D001). These wastes are not mixed intentionally, rather, they are a result of the waste generating process.

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (kg)	Product	Airborne Release	Liquid Effluent	On-site Storage	On-site Burial	Off-site Burial	Other	Unknown
Tributyl phosphate	1985							< 1 kg		Records do not exist for the other categories
	1984	2,455						5 kg		
	1983	2,530						4 kg		
	1982	950								

*The majority of solvent wastes occur as mixtures of several different chemicals and are managed as ignitable wastes (D001). These wastes are not mixed intentionally, rather, they are a result of the waste generating process.

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (kg)	Product	Airborne Release	Liquid Effluent	On-site Storage	On-site Burial	Off-site Burial	Other	Unknown
Trichloro-ethylene	1985	4,315						14 L		Records do not exist for the other categories
	1984	4,315						998 L		
	1983	2,309						26 L		
	1982	5,636								
	1981	17,547								
	1980	15,026								

*The majority of solvent wastes occur as mixtures of several different chemicals and are managed as ignitable wastes (D001). These wastes are not mixed intentionally, rather, they are a result of the waste generating process.

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (kg)	Product	Airborne Release	Liquid Effluent	On-site Storage	On-site Burial	Off-site Burial	Other	Unknown
Trichloro-methylsilane	1985	48								Records do not exist for the other categories
	1984	2								
	1983	5								
	1982	2								

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (kg)	Product	Airborne Release	Liquid Effluent	On-site Storage	On-site Burial	Off-site Burial	Other	Unknown
Triethano-lamine	1985							< 1 kg		Records do not exist for the other categories
	1984							4 kg		
	1982	91								
	1981	1								

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (kg)	Product	Airborne Release	Liquid Effluent	On-site Storage	On-site Burial	Off-site Burial	Other	Unknown
Urethane	1983 1981	946 38						1 kg		Records do not exist for the other categories

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (kg)	Product	Airborne Release	Liquid Effluent	On-site Storage	On-site Burial	Off-site Burial	Other	Unknown
Varsol	1985	24,129						208 L		Records do not exist for the other categories
	1984	22,718						624 L		
	1983	25,617						1,052 L		
	1982	29,474								
	1981	38,686								
	1980	40,594								

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (kg)	Product	Airborne Release	Liquid Effluent	On-site Storage	On-site Burial	Off-site Burial	Other	Unknown
Vydate	1982	19								Records do not exist for the other categories

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (kg)	Product	Airborne Release	Liquid Effluent	On-site Storage	On-site Burial	Off-site Burial	Other	Unknown
Xylene	1985	356 L 6 kg						12 L		Records do not exist for the other categories
	1984	148 L 4 kg						17 L		
	1983	284 L 10 kg						15 L		
	1982	201 L 8 kg								
	1981	310 L 11 kg								
	1980	394 L 15 kg								

*The majority of solvent wastes occur as mixtures of several different chemicals and are managed as ignitable wastes (D001). These wastes are not mixed intentionally, rather, they are a result of the waste generating process.

ATTACHMENT III

ORNL Surplus Chemical Sales and Transfers

ORNL Waste Oil Sold for Recycle

Date	Quantity (liters)	Off-site Buyer
FY 1980	37,850	Petroleum Recycling Corp.
FY 1981	39,364	Alpha Recovery Systems, Inc.
FY 1982	25,738	Petroleum Recycling Corp.
FY 1983	8,176	Universal Oil & Supply Co.
FY 1984	71,468	Alpha Recovery Systems, Inc.
FY 1985	7,949	Universal Oil & Supply Inc.
	18,168	Alpha Recovery Systems, Inc.
Total	208,713	

All wastes oils are analyzed for PCBs, organics, and radioactivity prior to being placed in the Waste Oil Storage Tank.

Waste Acceptance Criteria:

PCB	<2 ppm
Organics	<50 ppm
Gross beta	1.1×10^{-2} Bq/mL
Gross gamma	1.1×10^{-2} Bq/mL
^{3}H	1.1×10^{3} Bq/mL
^{14}C	3×10^{2} Bq/mL

Surplus Chemicals Transferred to Other Government Agencies

Date	Chemical	Quantity	Receiving Agency
6/79	Iodic acid	1 kg	Department of General Services
	Nickelous sulfate	4 kg	
	Potassium chromate	9 kg	
	Potassium permanganate	23 kg	
	Hardening resin	57 g	
	Argon	6 L	
6/80	1-Amino-8-naphthol-4-sulfonic acid	1000 g	Comparative Animal Research Laboratory
	Benzoic anhydride acid	100 g	
	1-Naphthylamine-4-sulfonic acid	25 g	
	1-Naphthylamine-8-sulfonic acid	1 kg	
	Benzyl acetate	2 kg	
	2,4-Dichloro-1-Naphthol	100 g	
	2,3-Dichloronaphthoquinone	25 g	
	2,7-Dihydroxynaphthalene	50 g	
	A-Fluoronaphthalene	50 g	
	A-Naphthonitrile	10 g	
	B-Naphthylamine hydrochloride	50 g	
	A-Naphthylhydrazine hydrochloride	75 g	
	6-Nitroquinoline	40 g	
7/80	o-Cresotinic acid	100 g	Comparative Animal Research Laboratory
	2,4-Dinitro-1-naphthol-7-sulfonic acid	25 g	
	P-Fluorobenzoic acid	5 g	
	8-Hydroxy-5-quinoline sulfonic acid	100 g	
	7-Iodo-8-hydroxyquinoline-5-sulfonic acid	100 g	
	A-Naphthaleneacetic acid	100 g	
	B-Naphthoxyacetic acid	25 g	
	S-Nitrobarbituric acid	25 g	
	B-Oxynaphtholic acid	50 g	
	Quinaldinic acid	25 g	
	Violuric acid	25 g	
	1-Amino-2-naphthol hydrochloride	25 g	
	2-Aminonaphthoquinone	5 g	
	2-Chloroquinoline	25 g	
	6-Chloroquinoline	25 g	
	Decahydroquinoline	25 g	
	5,7-Dibromo-8-hydroxyquinoline	35 g	

Surplus Chemicals Transferred to Other Government Agencies

Date	Chemical	Quantity	Receiving Agency
7/80 cont.	2,4-Dibromo-1-naphthol	25 g	
	9,10-Dichloroanthracene	25 g	
	3,5-Dimethylpyrozole	25 g	
	2,7-Dinitrophenanthra-quinone	1 g	
	2,4-Dioxothiazolidine	25 g	
	N-Methyl-2-quinoline	25 g	
	5-Nitro-1-naphthylamine	5 g	
	2-Nitrophenanthraquinone	5 g	
	8-Nitroquinoline	10 g	
8/80	1 lot (507 items) of miscellaneous chemicals classified as DOT Flammable liquid, n.o.s. and poisonous solid, n.o.s.		University of Tennessee, Knoxville via the Department of General Services
7/83	Potassium nitrite	16 kg	Georgia Coastal Plain Experimental Station, Tifton, GA
12/85	Ethyl Alcohol	11 drums	University of Tennessee, Knoxville via the Department of General Services
3/86	Hydraulic fluid, non-petroleum base	2 drums	Roane State Community College via the Department of General Services
	Hydraulic fluid	371 L	
	Gulf, oil	98 containers	
	Marcol, oil	2 drums	
	Shell Hydraulic oil	2 drums	
	Isopropanol	2 drums	

Surplus Chemicals Transferred to ORGDP Property Sales

Date	Chemical	Quantity
2/84	Sulfuric acid	16 kg
11/84	o-Aminophenol-p-sulfonic acid	5 kg
	Thioglycolic acid	200 g
	p-Anisidine acetyl	400 g
	o-Toluidine acetyl	2 kg
	Dibromopropyl alcohol	1 kg
	Cyanoacetanilide	100 g
	Resorcinol monomethyl ether	75 g
	Furil dioxime	20 g
	Heptoyl chloride	300 g
	2-Hydroxy-1,4-Dimethyl benzene	250 g
	Methyl bromobenzoate	525 g
	Methyl-p-aminophenol sulfate	200 g
	Myristoyl chloride	100 g
	P-Naphthol benzine	25 g
	o-Nitrophenetole	100 g
	P-Nitrophenetole	100 g
	P-Nitrophenylhydrazine	75 g
	P-Nitrophenylhydrazine hydrochloride	100 g
	P-Nitrosophenol sodium salt	125 g
	Palmitoyl chloride	25 g
	G-Phenylpropyl bromide	100 g
	Phloroglucinol	150 g
	Propionamide	200 g
	Tetra-N-Butylammonium iodide	400 g
	Thio-B-Naphthol	50 g
	Toluhydroguinone	250 g
	P-Tolyl isocyanate	25 g
	Trimethylamine	250 g
	Trimethylene bromide	200 g
	Trimethylene chlorohydrin	25 g
	Xanthydrol	20 g
	o-xylose	275 g
5/85	Lead carbonate	10 kg
	Potassium bromide	25 g
	Sodium acetate	30 kg
	Sodium peroxide	5 kg
	Tantalum pentoxide	1 kg
	Adipic acid	1 kg
	o-Aminobenzenesulfonic acid	125 g
	D-10-Camphorsulfonic acid	100 g
	Chloroacetic acid	2 kg
	3,5-Dinitrobenzoic acid	100 g
	Iodoacetic acid	25 g
	B-Iodopropionic acid	25 g

Surplus Chemicals Transferred to ORGDP Property Sales

Date	Chemical	Quantity
5/85 cont.	Naththalene-B-sulfonic acid	200 g
	A-Naphthoic acid	25 g
	o-Toluic acid	800 g
	p-Toluic acid	3 kg
	Undecylenic acid	500 g
	Acenaphthene	200 g
	Allyl formate	100 g
	m-Aminophenol	200 g
	o-Aminophenol	100 g
	p-Aminophenol	500 g
	p-Aminophenol hydrochloride	200 g
	Tert-Amylbenzene	50 g
	n-Amyl bromide	400 g
	o-Anisidine	100 g
	p-Anisidine	100 g
	Anthraquinone	250 g
	Azoxybenzene	100 g
	Benzil	200 g
	Benzyl chloride	2 kg
	A-Bromo-acetophenone	200 g
	Bromobenzene	10 g
	Bromomesitylene	200 g
	o-Bromophenol	50 g
	2-Bromopyridine	100 g
	o-Bromotoluene	50 mL
	Tert-butylbenzene	25 g
	N-Butyl bromide	250 g
	Isobutyl chloride	200 g
	Isocaproyl chloride	50 g
	Cetyl bromide	200 g
	Cetyl iodide	100 g
	o-Chloroaniline	500 g
	p-Chloroaniline	100 g
	A-Chloromethylnaphthalene	500 g
	Crotonaldehyde	500 g
	Cyanoacetamide	200 g
	1,2,5,6-Dibenzanthracene	1 g
	9,10-Dibromoanthracene	50 g
	N-Dibutylamine	5 kg
	Di-n-butyl Ketone	25 g
	Dicyandiamide	1 kg
	Diethyl Ketone	3 kg
	Dimethylbenzylamine	200 g
	AS-Diphenylhydrazine hydrochloride	25 g
	Di-p-tolyl Ketone	25 g
	Petroleum ether	8 L
	Ethyl anisate	100 g
	Ethyl anthranilate	100 g
	Ethyl B-Bromopropionate	100 g

Surplus Chemicals Transferred to ORGDP Property Sales

Date	Chemical	Quantity
5/85 cont.	Ethylene chlorobromide	500 g
	Ethylene chloride	8 kg
	Ethyl fumarate	1 kg
	Ethyl maleate	2 kg
	Ethyl orthoformate	250 g
	Lauryl bromide	700 g
	Methyl anthranilate	3 kg
	Methyl bromoacetate	400 g
	Methyl N-butylcarbinol	25 g
	Methyl N-butyrate	200 g
	o-Methylhydroxylamine hydrochloride	100 g
	Methyl malonate	500 g
	Methyl B-naphthyl Ketone	200 g
	Myristyl bromide	600 g
	m-Nitroaniline	100 g
	o-Nitroaniline	200 g
	4-Nitro-1,2-Diaminobenzene	100 g
	p-Nitrofluorobenzene	25 g
	Nitron	100 g
	1-Nitroso-2-napthol	100 g
	o-Nitrotoluene	3 kg
	p-Nitrotoluene	250 g
	Phenanthraquinone	25 g
	Phenetole	500 g
	Phenylbenzylcarbinol	25 g
	m-Phenylenediamine	250 g
	DL-A-Phenylethylamine	100 g
	DL-Phenylmethylcarbinol	5 kg
	Picoline	500 g
	Propiophenone	1000 g
	Iso-propylamine	8 kg
	Iso-propyl iodide	100 g
	Quinone	2 kg
	Trans-Stilbene	300 g
	Strychnine sulfate	200 g
	Succinonitrile	200 g
	Sucrose	150 g
	m-Tolunitrile	25 g
	o-Tolunitrile	25 g
	p-Tolunitrile	100 g
	N-Valeronitrile	100 g
	Bromocresol green	5 L
	Buffer solution	64 L

Surplus Chemicals Transferred to Environmental Management for Disposal

Date	Chemical	Quantity
6/80	4-Iodo-n-xylene	250 g
8/81	Silicic acid	2 kg
	Sulfuric acid	3 kg
	Ammonium thiocyanate	3 kg
	Calcium chloride	25 kg
	Sodium methylate	2 kg
	Yttrium, metal	30 g
	2-Amino-5-chlorobenzoic acid	25 g
	1-Amino-2-naphthol-4-sulfonic acid	75 g
	o-Aminophenol-p-sulfonic acid	4 kg
	B-Bromopropionic acid	25 g
	m-Chlorobenzoic acid	75 g
	Chlorosulfonic acid	2 kg
	3-Hydroxy-2-naphthoic acid	25 g
	l-Malic acid	450 g
	DL-Mandelic acid	1 kg
	Methoxyacetic acid	100 g
	o-Methoxybenzoic acid	100 g
	3-Nitrosalicylic acid	125 g
	5-Nitrosalicylic acid	10 g
	A-Oxynaphthoic acid	40 g
	Salicylacetic acid	100 g
	Salicylic acid	2 kg
	Trimethylacetic acid	200 g
	Acetamide	1 kg
	Allylthiourea	100 g
	N-Amyl chloride	100 g
	Tert-Amyl chloride	600 g
	Benzyl bromide	200 g
	Benzyl chloride	250 g
	o-Bromotoluene	1 kg
	sec-Butyl bromide	100 g
	N-Butyl-p-toluenesulfonate	125 g
	Chloroacetdiethylamide	25 g
	Chloroacetonitrile	200 g
	Chloroacetyl chloride	100 g
	A-Chloronaphthalene	3 kg
	2-Chloropyridine	100 g
	Cinchonine, alkaloid	50 g
	o-Cresyl-p-toluenesulfonate	200 g
	Dicyclohexylamine	1 kg
	Ethyl bromo-n-butyrate	150 g
	Ethyl bromo-n-caproate	75 g
	Ethyl chloroacetate	250 g
	Ethyl naphthylamine	100 g
	m-Fluorochlorobenzene	25 g
	m-Fluorotoluene	25 g
	o-Fluorotoluene	100 g

Surplus Chemicals Transferred to Environmental Management for Disposal

Date	Chemical	Quantity
8/81	2-Iodo-1,3-dimethylbenzene	10 g
cont	Methyl adipate	100 g
	Methyl bromopropionate	300 g
	Methyl orthoacetate	600 g
	6-Methylquinoline	25 g
	8-Methylquinoline	50 g
	Methyl toluate	< 1 kg
	Naphthyl acetate	100 g
	p-Nitroacetanilide	75 g
	A-Nitronaphthalene	400 g
	m-Nitrophenol	25 g
	Phenylethyl bromide	300 g
	Phenylhydrazine	500 g
	DL-Phenylmethylcarbinol	9 kg
	Phenyl-p-tolyl ketone	300 g
	Pinacol	500 g
	Propiophenone	3 kg
	N-propyl carbonate	100 g
	Propylene glycol	8 L
	Thionaphthol	225 g
	Ethyl bromopropionate	100 g
	Glycine anhydride	75 g
7/82	Hydrofluosilicic acid	3 kg
	Cadmium metal	113 g
	Calcium chloride	11 kg
	Lead sulfate	1 kg
	Magnesium sulfate	16 kg
	Potassium thiocyanate	3 kg
	A-Bromo-n-valeric acid	50 g
	o-Chlorobenzoic acid	100 g
	Trans-Cinnamic acid	300 g
	2,4-Dinitrobenzene sulfonic acid	10 g
	Mucic acid	< 1 kg
	Naphthalic anhydride acid	100 g
	m-Toluic acid	2 kg
	Trichloroacetic acid	5 kg
	Diacetone alcohol	250 g
	Myristyl alcohol	50 g
	Phenylethyl alcohol	1 kg
	Phenylpropyl alcohol	100 g
	2-Aminopyrimidine	300 g
	Iso-amyl bromide	100 g
	N-Amyl iodide	300 g
	Benzalacetone	300 g
	Benzidine dihydrochloride	28 g
	Bromoacetyl bromide	300 g
	Bromocyclohexane	200 g
	N-Butyl bromide	15 kg

Surplus Chemicals Transferred to Environmental Management for Disposal

Date	Chemical	Quantity
7/82 cont.	N-Butyl sebacate	500 g
	Cellulose acetate	1 kg
	Cellulose triacetate	500 g
	m-Chlorophenol	25 g
	o-Chlorophenol	1 kg
	Di-n-butylaniline	300 g
	p-Diethylaminobenzaldehyde	25 g
	Diethyl-A-naphthylamine	25 g
	Ethylamine hydrochloride	200 g
	Ethyl bromoacetate	900 g
	Ethylene bromide	23 L
	Ethylene chlorohydrin	2 kg
	Ethyl phosphate	2 kg
	Fluoranthene	200 g
	Fluorenone	100 g
	N-Hexylphenylcarbinol	40 g
	o-Idobenzoyl chloride	100 g
	Methyl N-amyl Ketone	7 kg
	Methylethylamine hydrochloride	60 g
	4-Methyl-2-pentanol	3 kg
	Methyl phenylacetate	250 g
	Methyl-iso-thiocyanate	50 g
	4-Methylumbelliferone	25 g
	1,2-Naphthoquinone	25 g
	1-Naphthyl isocyanate	25 g
	Pentaerythritol	500 g
	Phenanthrene	100 g
	m-Phenetidine	100 g
	o-Phenetidine	100 g
	p-Phenetidine	400 g
	Phenyl acetate	300 g
	Phenyl-a-naphthylamine	100 g
	Phthalyl chloride	500 g
	p-Isopropylbenzaldehyde	800 g
	Isopropyl bromide	500 g
	Propylene chloride	750 g
	N-Propyl sulfone	25 g
	p,p-Tetramethyldiaminodiphenylmethane	300 g
	o-Tolidine dihydrochloride	400 g
	1,2,3-Tribromopropane	200 g
	1,1,1-Trichloroethane	23 L
	Xanthydrol	80 g
8/82	1,1,1-Trichloroethane	416 L
	2,2,4-Dihydroxybenzaldehyde	700 g
4/83	Ammonium acetate	16 kg
	Ammonium sulfide	5 L
	Antimony, metal	< 1 kg

Surplus Chemicals Transferred to Environmental Management for Disposal

Date	Chemical	Quantity
4/83 cont.	Calcium fluoride	5 kg
	Ferrous sulphamate	19 L
	Lithium sulfate	< 1 kg
	Mercurous nitrate	< 1 kg
	Acetyl p-aminobenzoic acid	400 g
	B-Amino-1-naphthol-3,6-disulfonic acid	250 g
	DL-A-Aminophenylacetic acid	30 g
	4-Amino-m-toluenesulfonic acid	2 kg
	p-Arsanilic acid	200 g
	DL-10-Camphorsulfonic acid	200 g
	Cyanuric acid	300 g
	A,B-Dibromosuccinic acid	75 g
	Diglycolic acid	200 g
	Furoic acid	200 g
	Indole-3-acetic acid	2 g
	Acetyl thiourea	200 g
	B-Diethylaminoethyl alcohol	1 kg
	1-Aminoanthraquinone	100 g
	Benzoylacetone	20 g
	Benzyl thiocyanate	600 g
	Bromohydroquinone	50 g
	N-Butyl sulfone	50 g
	2,4-Dibromophenol	100 g
	Di-isobutylene	4 kg
	Dichloroacetyl chloride	400 g
	1,3-Diphenylguanidine	300 g
	Ethyl,N-Butylmalonate	100 g
	Ethyl isothiocyanate	25 g
	Hexachloroethane	500 g
	Methyl thiocyanate	200 g
	Phenyl isothiocyanate	100 g
	Propylene diamine	1 kg
	Succinimide	300 g
	p,p-Tetramethyldiaminobenzophenone	25 g
	Xanthone	50 g
	Ion Exchange Resin	3 kg
4/84	Molybdic acid	1 kg
	Cesium oxide	5 kg
	Potassium bifluoride	5 kg
	Potassium, metal	< 1 kg
	Potassium periodate	< 1 kg
	Potassium thiocyanate	1 kg
	Titanium oxide	10 kg
	1-Nitroanthraquinone-5-sulfonic acid	5 g
	Trichloroacetic acid	800 g
	Acetamide	1 kg
	p-Aminophenol acetyl	25 g
	B-Dimethylaminoethyl alcohol	1 kg

Surplus Chemicals Transferred to Environmental Management for Disposal

Date	Chemical	Quantity
4/84	p-Aminoacetophenone	50 g
cont.	2-Aminoanthraquinone	100 g
	3-Aminoquinoline	50 g
	2-Aminothiazole	1000 g
	Benzenesulfonylamide	100 g
	o-Bromophenetole	125 g
	p-Bromophenetole	100 g
	m-Chlorophenyl isocyanate	100 g
	2,4-Diaminophenol dihydrochloride	500 g
	Dibenzalacetone	25 g
	4,4-Dibromobiphenyl	200 g
	2-Diethylamino-1,4-dimethylbenzene	50 g
	4,4-Dihydroxybenzophenone	50 g
	2,5-Dimethoxyaniline	75 g
	Dimethyldihydroresorcinol	25 g
	Phenyl cellosolve	22 kg
	Ethylene glycol, diacetate	8 kg
	Hydantoin	75 g
	a-Hydrindone	50 g
	p-Hydroxybenzaldehyde	200 g
	g-Hydroxybutronitrile	10 g
	p-Hydroxyphenylglycine	100 g
	o-Methoxybenzaldehyde	300 g
	p-Phenylacetophenone	25 g
	Isopropyl acetate	100 g
	Isopropyl acetate, purified	8 L
	Tetramethylammonium chloride	1000 g
	p-Toluamide	75 g
	1,2,3-Trichloropropane	200 g
	Buffer solution	23 L
	Ion Exchange resin	8 kg

APPENDIX I

On August 6, 1983, an unknown quantity of organic mixtures and pesticides spilled into White Oak Creek resulting in a fish-kill. Approximately 7,570 L of material (mostly water) was removed from the creek and shipped to an off-site facility for disposal. The chemical analyses of this material is shown below.

ANALYSES RESULTS OF WHITE OAK CREEK FISH KILL INCIDENT

Name of Chemical	Concentration
Aldrin	Trace (low ppb)
Heptachlor	Trace (low ppb)
Acetaldehyde	1 ppm
Freon 113	1 ppm
Xylene	< 0.5 ppm
Toluene	< 0.5 ppm
Freon 11	< 0.5 ppm
Benzene	< 0.5 ppm
Ethyl alcohol	< 0.5 ppm
Methylene chloride	< 0.5 ppm
Acetone	< 0.5 ppm
Butyl cellusolve	< 0.5 ppm
Dimethyl benzene	< 015 ppm

APPENDIX II

History of PCB-Related Incidents/Spills at ORNL

Date	Location	Material	Amount
May 6, 1981	3026	PCB Oil (Transformer) < 5 ppm	small amount
July 27, 1981	3012	PCB Oil	378.5 L (100 gal)
August 3, 1981	6000	PCB Oil	3.78 L (1 gal)
August 12, 1983	4500S, R-211	PCB Oil (light ballast) 480,000 ppm	0.01 L (0.003 gal)
April 4, 1984	3026-D	PCB Oil (Transformer) 500 ppm	0.47 L (1 pint)
April 16, 1986	4500S, D-61	PCB Oil (light ballast) 854 ppm	0.01 L (0.003 gal)
September 24, 1985	4500S, G-260	PCB Oil (light ballast) 930,000 ppm	0.01 L (0.003 gal)